Fishery Management Report No. 08-75

Lower Kuskokwim River Inseason Subsistence Salmon Catch Monitoring, 2007

Final Report for Study FIS 06-306
USFWS Office of Subsistence Management
Fisheries Information Services Division

by

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and

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Alaska Department of Fish and Game **Divisions of Sport Fish and Commercial Fisheries**

Symbols and Abbreviations

The following symbols and abbreviations, and others approved for the Système International d'Unités (SI), are used without definition in the following reports by the Divisions of Sport Fish and of Commercial Fisheries: Fishery Manuscripts, Fishery Data Series Reports, Fishery Management Reports, and Special Publications. All others, including deviations from definitions listed below, are noted in the text at first mention, as well as in the titles or footnotes of tables, and in figure or figure captions.

Weights and measures (metric)

centimeter	cm
deciliter	dL
gram	g
hectare	ha
kilogram	kg
kilometer	km
liter	L
meter	m
milliliter	mL
millimeter	mm

Weights and measures (English)

cubic feet per second	ft^3/s
foot	ft
gallon	gal
inch	in
mile	mi
nautical mile	nmi
ounce	oz
pound	lb
quart	qt
yard	yd

Time and temperature

day	d
degrees Celsius	°C
degrees Fahrenheit	°F
degrees kelvin	K
hour	h
minute	min
second	s

Physics and chemistry

all atomic symbols	
alternating current	AC
ampere	A
calorie	cal
direct current	DC
hertz	Hz
horsepower	hp
hydrogen ion activity (negative log of)	pH
parts per million	ppm
parts per thousand	ppt, ‰
volts	V
watts	W

General

Alaska Administrative Code	AAC
all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.
all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.
at	@
compass directions:	
east	E
north	N
south	S
west	W
copyright	©
corporate suffixes:	
Company	Co.
Corporation	Corp.
Incorporated	Inc.
Limited	Ltd.
District of Columbia	D.C.
et alii (and others)	et al.
et cetera (and so forth)	etc.
exempli gratia (for example)	e.g.
Federal Information Code	FIC
id est (that is)	i.e.
latitude or longitude	lat. or long.
monetary symbols (U.S.)	$, ¢
months (tables and figures): first three letters	Jan,...,Dec
registered trademark	®
trademark	™
United States (adjective)	U.S.
United States of America (noun)	USA
U.S.C.	United States Code
U.S. state	use two-letter abbreviations (e.g., AK, WA)

Measures (fisheries)

fork length	FL
mideye to fork	MEF
mideye to tail fork	METF
standard length	SL
total length	TL

Mathematics, statistics

all standard mathematical signs, symbols and abbreviations	
alternate hypothesis	H_A
base of natural logarithm	*e*
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	(F, t, χ^2, etc.)
confidence interval	CI
correlation coefficient (multiple)	R
correlation coefficient (simple)	r
covariance	cov
degree (angular)	°
degrees of freedom	df
expected value	*E*
greater than	>
greater than or equal to	≥
harvest per unit effort	HPUE
less than	<
less than or equal to	≤
logarithm (natural)	ln
logarithm (base 10)	log
logarithm (specify base)	$\log_2$, etc.
minute (angular)	'
not significant	NS
null hypothesis	H_O
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	α
probability of a type II error (acceptance of the null hypothesis when false)	β
second (angular)	"
standard deviation	SD
standard error	SE
variance	
population	Var
sample	var

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ABSTRACT

Through a collaborative effort with the Alaska Department of Fish and Game (ADF&G), the Orutsararmiut Native Council (ONC) conducted inseason subsistence salmon surveys addressing qualitative assessment of run timing and abundance at selected fish camps and in communities of fishers in the lower Kuskokwim River during the summer of 2007. The project ran for 7 weeks, from June 1 to July 15. Data collected from these surveys was relayed to fishery managers on a weekly basis and provided timely inseason information on relative strength by species. This project provided additional information to evaluate salmon run strength by indicating the relative success of some subsistence fishers in achieving their harvest goals and also provided a venue for local user input into the evaluation of salmon abundance and corresponding management strategies. The ONC inseason subsistence monitoring program, initiated in 2001, increased the quality and consistency of information obtained from subsistence fishers. Improvements to project operations since 2001 has increased the number and frequency of fishing family interviews, thereby increasing the credibility of the salmon catch information. Comparisons of inseason subsistence catch information can now be made between weeks within a given year and between years. Inseason subsistence catch information has also been used in combination with other information to evaluate the various management actions.

Key words: Bethel, Chinook, *Oncorhynchus tshawytscha*, sockeye, *O. nerka*, chum, *O. keta*, coho, *O. kisutch*, salmon, Kuskokwim River, Orutsararmiut Native Council, subsistence, Kuskokwim River Salmon Management Working Group.

INTRODUCTION

The Kuskokwim River drains an area of approximately 50,000 square miles, 11% of the total area of Alaska (Brown 1983). Each year adult salmon return to the river and support subsistence, commercial, and sport fisheries. The Kuskokwim River subsistence salmon fishery is one of the largest and most important in the state (ADF&G 2005). From June through August, the daily activities of many Kuskokwim River households revolve around harvesting, processing, and preserving salmon for subsistence use. The use of family fish camps has been, and remains, an important part of Kuskokwim River subsistence activities. Alaska Department of Fish and Game (ADF&G), Division of Subsistence (SD) studies indicate subsistence-harvested wild fish as accounts for 85%of total subsistence-harvested fish and wildlife resources in Kuskokwim River communities; with salmon accounting for up to 53% of the total annual subsistence harvest (Coffing 1991). The harvest of salmon for subsistence in some Kuskokwim River communities may be as high as 650 lbs per capita (Coffing 1991).

Depending on species, subsistence harvests are a large part of the total utilization of salmon. The recent 10 year (1997–2006) average subsistence harvest includes 72,277 Chinook salmon *Oncorhynchus tshawytscha*, 52,439 chum salmon *O. keta*, 37,077 sockeye salmon *O. nerka* and 30,427 coho salmon *O. kisutch* (Krauthoefer and Caylor *In prep*; D. W. Koster, Research Analyst, ADF&G, Anchorage; personal communication). The 10 year average total utilization is 77,494 Chinook, 94,424 chum, 53,067 sockeye, and 232,424 coho salmon (Linderman et al. *In prep*). From 1997 to 2006, the subsistence harvest averaged 93% of the total utilization for Chinook, 56% for chum, 70% for sockeye, and 14% for coho salmon (Appendices A1–A4).

More than 2,000 households in the Kuskokwim Area annually harvest salmon for subsistence use, and many households not directly involved in catching salmon assist family and friends with cutting, drying, smoking, and associated preservation activities (salting, canning, and freezing). The Kuskokwim River drainage contains 76% of all Kuskokwim Area households and 86% of the identified subsistence-fishing households (Fall et al. 2007). Bethel is the largest community in the region, consisting of approximately 1,739 households. In 2005, the postseason survey conducted by ADF&G SD estimated that residents of Bethel accounted for 33% of the

Kuskokwim Area subsistence salmon harvests and 33% of all subsistence caught Chinook salmon. In 2005, ADF&G SD also estimated that 60,956 Chinook salmon were harvested by residents of lower Kuskokwim River villages, or 87% of the total Kuskokwim River Chinook salmon subsistence harvest (Fall et al. 2007).

Alaska Statute 16.05.258. *Subsistence use and allocation of fish and game* establishes a subsistence use priority for reasonable harvest opportunity consistent with sustained yield management. Consistent with State statute, the Alaska Board of Fisheries (BOF) has determined the levels of Kuskokwim salmon that are customary and traditionally taken or used for subsistence (5 AAC 01.286). For the Kuskokwim River drainage, the BOF found the following amounts of fish are reasonably necessary for subsistence uses: 1) 64,500–83,000 Chinook salmon, 2) 39,500–75,500 chum salmon, 3) 27,500–39,500 sockeye salmon, and 4) 24,500–35,000 coho salmon. ADF&G SD conducts annual postseason household fishing surveys in most of the Kuskokwim Area communities in order to estimate subsistence salmon harvest levels (Fall et al. 2007). Postseason Kuskokwim River household surveys indicate salmon harvested in 2005 fell within amounts necessary for subsistence for all species (Figures 1–4).

The Alaska National Interest Lands Conservation Act (ANILCA) of 1980 mandates that customary and traditional use of a fish and wildlife resource have a priority over non-subsistence uses by rural residents on Federal public lands and waters. On October 1, 1999, in response to a court decision, the Secretaries of the Interior and Agriculture published regulations for subsistence fisheries in waters within and adjacent to national parks, refuges, forests, and wild and scenic rivers. The Secretary of the Interior and the Secretary of Agriculture delegated their authority in Alaska to the Federal Subsistence Board (FSB). Federal subsistence fishing regulations are adopted through the FSB process. The FSB may close fishing to other subsistence and non-subsistence uses in these waters to accommodate a priority for Federally qualified rural subsistence users if it is determined that there are subsistence or conservation concerns.

Based on annual postseason subsistence survey estimates, Kuskokwim Area subsistence salmon fisheries consistently rank as one of the largest in the State of Alaska (Fall et al. 2006; Fall et al. 2007). State and Federal lawmakers have recognized the use and dependence by residents of the area on this resource and established subsistence use as a priority over other uses of the resource. In order to maintain the resource, State regulations and policies have been established to provide for sustained yield management. Kuskokwim Area commercial fishing regulations since 1985 have limited gillnet mesh size to a maximum of 6 inches and, in 1987, the directed Chinook salmon commercial fishery was discontinued (Linderman et al. *In prep*).

In September 2000, citing guidelines established in the *Policy for the Management of Sustainable Salmon Fisheries* (5 AAC 39.222), the BOF classified the Kuskokwim River Chinook and chum salmon stocks as yield concerns. This determination was based on the inability to maintain expected yields above the stock's escapement needs since 1998, despite specific management actions taken, and anticipated low adult salmon returns in 2001 (Burkey et al. 2000). Based on the yield concern classification, the BOF adopted the Kuskokwim River Salmon Rebuilding Management Plan (5 AAC 07.365) in January 2001 and amended in January 2004 (Bergstrom and Whitmore 2004). The FSB supported this action plan through Special Action in the 2001 season and more recently through an Interim Memorandum of Agreement. This management plan provided guidelines for the rebuilding and management of the Kuskokwim River salmon fishery that would result in the sustained yield of salmon stocks large

enough to meet escapement goals, provide fishers with a reasonable opportunity to harvest subsistence salmon, and to provide for fisheries other than subsistence.

Escapements improved in 2001 and 2002, and the trend has continued through 2006 (Whitmore et al. 2004, Linderman and Bergstrom 2006). Chinook and chum salmon escapement reached record levels from 2004 through 2006. Escapements of chum salmon to the Kogrukluk River in 2005 and 2006 were up to 3 times higher than any previous escapements dating back to 1976. The improved abundance from 2004 through 2006 allowed for a relaxation of the fishery restrictions imposed by the rebuilding plan, but only after compelling evidence was gathered that suggested escapement and subsistence needs were being achieved.

In February of 2007, The BOF discontinued the Kuskokwim River Chinook and chum salmon stock of yield concern designations based on Chinook and chum salmon runs being at or above the historical average each year since 2002 (Linderman and Bergstrom 2006). The Kuskokwim River Salmon Management plan was also modified to allow for a guideline commercial harvest of 0–50,000 Chinook salmon. The June/July commercial salmon fishery will be managed based on identifying harvestable surpluses of Chinook, sockeye, and chum salmon above escapement and subsistence needs (5 AAC 07.365, 2007). The subsistence fishing schedule, which when implemented allowed for 4 consecutive days of subsistence fishing per week, was retained in the management plan to allow for its implementation when warranted. The general management strategy since discontinuing the Chinook and chum salmon stock of concern designations is to implement the subsistence fishing schedule if there is compelling evidence preseason or inseason that Chinook or chum salmon runs will be below levels needed to achieve escapement goals and provide for subsistence uses.

In February of 2007, the BOF also authorized the ADF&G to allow the use of up to 8 inch mesh gear in the District 1 commercial fishery from June 15 through July 1. The use of up to 8 inch mesh gear would be allowed by emergency order; otherwise, all commercial openings will be limited to gillnet mesh sizes of 6 inches or less. The BOF made it clear that it's purpose in allowing for up to 8 inch mesh gear in the District 1 commercial fishery was not to establish a large mesh gear Chinook salmon commercial fishery, but to provide a management tool that may or may not be used. It is more likely that mesh sizes greater than 6 inches will not be used in the District 1 commercial fishery, as 6 inch mesh gear will allow for harvest of Chinook, sockeye, and chum salmon combined.

The Kuskokwim River Salmon Management Working Group (Working Group) was formed in 1988 by the BOF in response to requests from stakeholders in the Kuskokwim River drainage who wanted a more active role in the management of salmon fishery resources (Mundy 1995). Since then, the Working Group has become increasingly active in the preseason, inseason, and postseason management of the Kuskokwim River drainage subsistence, commercial, and sport salmon fisheries. The Working Group now serves as a public forum for State and Federal fisheries managers to meet with local users of the salmon resource to review run assessment information and reach a consensus on how to proceed with management of Kuskokwim River salmon fisheries. The Working Group typically meets beginning in March or April each calendar year; has intensive and frequent meetings during June, July, and August; and has a wrap-up session in September or October. Working Group meetings provide a forum for area fishers, user representatives, community representatives, Federal Subsistence Regional Advisory Council (RAC) representatives, Fish and Game Advisory Committee members, and State and Federal managers to come together and discuss issues relevant to sustained yield fishery management

and fishery resource use. Working Group meetings provide a venue for the inseason subsistence catch monitoring project to present its findings to fishery managers and Working Group members.

OUTLOOK AND MANAGEMENT STRATEGIES

Preseason information provided to fishers regarding the fishery outlook and management strategies affected how they planned and scheduled their fishing activities. ADF&G expected 2007 salmon run abundance to be average to above average. The 2007 Chinook, chum, sockeye, and coho salmon runs were expected to be similar in abundance to 2006 when there were harvestable surpluses beyond what was needed for escapement and subsistence uses.

For the past 2 decades, a system has been in place to monitor salmon run timing and run strength by comparison of current year information to historic information. This system includes, but is not limited to, the evaluation of Bethel Test Fishery (BTF) project catch statistics, commercial harvest catch statistics, weir passage, sonar passage, and aerial surveys indices of salmon abundance. Evaluation of inseason subsistence harvest information, collected ad hoc, has always been a component of this process.

In 2001, the inseason subsistence fishery monitoring program was initiated to obtain more consistent qualitative subsistence harvest information in the Kuskokwim Area (Whitmore et al. 2004). The monitoring program is a result of a cooperative effort between Tribal, State, and Federal agencies, funded through the United States Fish and Wildlife Service (USFWS), Office of Subsistence Management (OSM). The program has strengthened the role that subsistence catch monitoring information plays in achieving management priorities, such as meeting escapement goals and/or providing fishers with an avenue to inform fishery managers on how their subsistence salmon harvests are progressing. The Orutsararmiut Native Council (ONC), a local tribal organization, conducts the cooperative project in the Bethel area and employs technicians who survey subsistence fishers inseason and summarize and report their findings to ADF&G, USFWS, and the Working Group on a weekly basis.

FISHERY MANAGEMENT

From 2001 through 2006, the Kuskokwim River salmon fishery was managed according to the Kuskokwim River Salmon Rebuilding Management Plan (Rebuilding Plan). The purpose of the Rebuilding Plan was to provide guidelines for rebuilding and management of the Kuskokwim River fishery that will result in the sustained yield of salmon stocks large enough to meet the escapement goals, amounts necessary for subsistence, and for fisheries other than subsistence (5 AAC 07.365). The Rebuilding Plan established a subsistence fishing schedule allowing salmon net and fish wheel fisheries to be open for 4 consecutive days per week in June and July by emergency order. The schedule was implemented in a step wise progression up the river consistent with salmon run timing and could be altered based on run strength to achieve escapement goals. Once escapement goals were assured for Chinook and chum salmon, subsistence fishing could be allowed 7 days per week. The goal of the subsistence fishing schedule was to spread the subsistence harvest of Chinook and chum salmon throughout the run by providing blocks of time when fish pass through the lower river without any fishing pressure.

In 2007, BOF revised the Kuskokwim River Salmon Management Plan. Included in the Management Plan was a guideline harvest level of 0–50,000 Chinook salmon in the commercial fishery. The commercial Chinook salmon fishery had been closed since 1987 and allowed for an

incidental harvest of 0–50,000 Chinook salmon. Because the Chinook and chum salmon stock of concern designations were discontinued and an above average return was anticipated, ADF&G did not implement the subsistence fishing schedule in the Kuskokwim River in 2007. Kuskokwim River subsistence fishing was open 7 days a week with the exception of closures before, during and after commercial fishing periods. ADF&G biologists determined that 2007 salmon abundance was adequate to achieve escapement goals, provide sufficient opportunity for subsistence fishers, and identified a commercially harvestable surplus of chum, sockeye, and Chinook salmon. Despite the harvestable surplus, a commercial fishery was not implemented in District 1 during June and July because the one local commercial processor declined to buy fish, citing economic concerns because of poor chum salmon market conditions and anticipated high chum salmon harvest levels. From August 1 through August 24, a coho directed commercial fishery was prosecuted in District 1. In 2007, 10 subdistrict and 2 full district commercial fishing periods occurred between August 1 and August 24 (Table 1; Figures 5-6). During commercial openings, waters of the commercial fishing district or subdistrict open to commercial fishing are closed to subsistence salmon fishing activity. Subsistence fishing closures associated with commercial fishing periods lasted from 6 hours before, during, and 3 hours after commercial openings. In 2007, commercial fishing activities in the Kuskokwim River resulted in 75 hours of subsistence salmon fishing closures within Subdistrict 1-A and the adjacent buffer area, 75 hours of subsistence salmon fishing closures in Subdistrict 1-B and the adjacent buffer area, and 30 hours when all of District 1 was closed to subsistence salmon fishing (Table 1). The time and area of closures to subsistence fishing in 2007 was a small proportion of the total time and area open to subsistence activities throughout the season.

This report summarizes results from inseason subsistence harvest surveys conducted by ONC in the summer of 2007 with subsistence fishers in the Bethel area of the lower Kuskokwim River (FIS 06-306). This report represents a final annual report for project FIS 06-306 funded by USFWS OSM. Project 06-306 was also operated in 2006 and is a continuation of project FIS 05-307 (2005), project FIS 04-353 (2004) and FIS 01-132 (2001-2003) (Martz and Whitmore 2005; Dull and Shelden 2007).

OBJECTIVES

The objectives for Project No. 06-306, Bethel area inseason subsistence salmon catch monitoring data collection were:

1. Characterize salmon run timing and relative abundance in May, June, and July through weekly interviews with Bethel Area subsistence salmon fishers.
2. Characterize fishing activity and gear usage through weekly interviews with Bethel Area subsistence salmon fishers in May, June, and July.
3. Build management capacity by providing local input into the management process for the salmon subsistence fishery in May, June, and July through the presentation of weekly summaries of interviews with Bethel Area subsistence salmon fishers at Working Group meetings
4. Build local capacity by providing cross training to an ONC technician in other ADF&G and USFWS projects for up to 2 weeks.

METHODS

In consultation with ADF&G staff, ONC hired a fishery technician to: 1) conduct weekly interviews with subsistence fishers along the mainstem Kuskokwim River, 2) summarize those data for Working Group meetings and 3) assist another ONC technician with the cooperative agreement project 06-106 between ADF&G and ONC in the collection of biological data from Chinook salmon taken in the subsistence fishery to characterize the age, sex, and length (ASL) composition of the subsistence harvest by gear type. The ONC technician conducted inseason subsistence surveys and collected Chinook salmon biological data in the Lower Kuskokwim River area between Napaskiak and the mouth of the Gweek River (Figure 7).

INTERVIEWS

The Lower Kuskokwim River subsistence fishery catch monitoring project relies on voluntary participation of local subsistence fishers. Participants are allowed to remain anonymous and most have participated since 2001 when the project began. Most are life-long residents of the Kuskokwim Area and represent some of the most experienced and knowledgeable fishers in the Bethel area. Most participants are of Alaska Native descent with a long tradition of practicing subsistence as a way of life. The amount of experience in the fishery by those interviewed ranges from 10 to 50 years. The ONC technician has approximately 24 years of subsistence fishing experience in the Kuskokwim River.

Nearly all participants are interviewed at seasonal fishing locations (fish camps) that have been maintained across generations in the areas of Gweek River, Church Slough, Steamboat Slough, Straight Slough, Old Bethel Airport, Oscarville Slough, Napaskiak Slough, the mainstem Kuskokwim River and Bethel (Figure 7). A list of approximately 54 interview participants (developed and maintained since 2001) from previous years formed the initial list for 2007. The fishery technicians interviewed these 54 families, along with opportunistic encounters with fishers at the Bethel boat ramp or in other areas within the city of Bethel, during which additional families wishing to participate were added. Generally, the subsistence fisher responsible for the majority of the subsistence salmon harvest was interviewed at each fish camp. This fisher usually represents a larger group of people participating in the harvest, processing and preserving of subsistence caught salmon. Based on the success in past years, the same family member of a fish camp is interviewed each week.

The interview format was developed in conjunction with staff from ADF&G, USFWS, and ONC. ADF&G staff took the lead in coordinating and finalizing the interview format and protocols (Appendix B1). Interview questions included family name, community of residence, date household began fishing, fish camp location, fishing area, season harvest goals by species, qualitative assessment of weekly fishing success, progress toward achieving harvest goals, gear types utilized, general comments about fishing conditions, opinion on run timing, fishing difficulties, whether subsistence harvest goals were met, and the date the family completed salmon fishing for each species. The survey questions were designed to: 1) provide information from interviews with individual subsistence fishing families to provide a qualitative assessment of subsistence fishing success, 2) determine timing of the harvest 3) determine if fishers were selectively harvesting specific salmon species using particular mesh sizes or harvest methods, 4) determine if there were factors other than fish abundance that may have affected the relative success of achieving their harvest goals, and 5) determine a general assessment of salmon run timing based on subsistence fishers' perspective. Fishers were specifically asked: "Compared

with this time in a "Normal" year, how were your catch rates for salmon this week?" Their answers were categorized as 'Very Good', 'Normal', or 'Poor' and together were viewed as an index of relative abundance. In order to provide a general characterization of salmon run timing, subsistence fishers were additionally asked the question: "Does the salmon run appear to be running early, late, or normal?" (Appendix B1).

In 2007, the project consisted of hiring and training one ONC fisheries technician to begin field season preparations on May 26 and subsistence catch monitoring interviews on June 1. This technician worked in partnership with the ONC technician hired for FIS 06-306 and has been employed by ONC since the project began in 2001. Each week, the technicians would travel by skiff to 54 outlying fish camps in the lower Kuskokwim River between Oscarville and the mouth of the Kwethluk River (Figure 7). The same general fish camp occupants were contacted as in the 6 years of project operations . Bethel fishers were contacted in-person at their fish camps or by phone at their homes. The technician conducted interviews with subsistence fishers in Bethel and vicinity[1] fish camps beginning Wednesday of every week from June 6 through July 14. The technician asked questions in order to complete a 2-page survey instrument form (Appendix B1). Completed weekly reports summarizing answers were generally received by ADF&G staff the Monday following the interview week and were distributed to Working Group members and the public attending Working Group meetings (Appendix C1–C7). Collection of this information and distribution of the subsequent summaries provided a forum for local user input into the determination of salmon run abundance, run timing, and corresponding management strategies.

Once interviews were discontinued for 2007, the fisheries technicians were cross trained with ADF&G staff to begin drafting the narrative, tables, figures, and appendices of this report and worked inseason at the Kogrukluk River weir and the Kalskag fish wheel tagging project. The ONC Natural Resource Director regularly attended Working Group meetings and provided oral summaries of the interviews.

RESULTS

Subsistence interviews were conducted over a 6 week period during June and July 2007. On average, 38 families were interviewed each week. From the week ending June 12 through the week ending July 14, between 33 and 44 families were interviewed regarding their subsistence fishing activities, with a total of 225 interviews conducted in 2007 (Tables 2 and 3). The weekly summary for the week ending June 3 did not include any formal surveys because equipment difficulties prevented the crew from conducting interviews that week. In all, 7 weekly interview summaries were presented at Working Group meetings during June and July 2007 (Appendix C1–C7).

The most intense fishing activity in the study area occurred during the period of greatest Chinook salmon abundance, from mid June through the first week of July. During this period, a total of 192 interviews were conducted and 131 families (68%) reported fishing. The percentage of interviewed families who reported fishing each week ranged from 30% to 91% (Tables 2 and 3). In all interviews from mid June through the first week of July, 11% of fishers reported Chinook salmon fishing as 'Very Good,' 34% reported Chinook salmon fishing as 'Normal,' and 54% reported Chinook salmon fishing as 'Poor.' During the same time period, 2% of respondents

[1] The Bethel vicinity is defined as: those waters of the mainstem Kuskokwim River between Napaskiak and the lower end of Kuskokuak Slough, including Church Slough.

classified Chinook salmon run timing as early, 14% classified it as normal, and 74% classified run timing as late. 10% of respondents did not assess Chinook salmon run timing.

From mid June through the first week of July, 131 fishing families interviewed reported using gillnets and no families reported using rod and reel. Families who used only drift gillnet gear constituted 64% of interviewed fishers, while those using only set gillnet gear accounted for 11% of interviewed fishers (Table 4). Of the families fishing from mid June through the first week of July, 25% reported using both drift and set gillnet gear. Gillnets with mesh size greater than 6 inches are primarily utilized to target Chinook salmon and 79% of interviewed fishers used only gillnets of this mesh size from mid June through the first week of July. Nearly 8% of interviewed fishers used only gillnets with mesh sizes smaller than 6 inches, while 14% reported using both larger and smaller mesh sizes during this period.

Interviewees declined to comment on the chum and sockeye salmon runs until late June, either because they felt it was too early in the run to make an assessment or they were not fishing for those species. In interviews ending July 2 through July 14, fishing effort had decreased with only 35% of those interviewed reported fishing (Table 2). Chum salmon fishing was classified as 'Very Good' by 67% of the 36 respondents, 22% classified chum fishing as 'Normal', and 11% classified chum fishing as 'Poor.' In the same 36 interviews, 8% classified sockeye salmon fishing as 'Very Good', 44% classified sockeye fishing was 'Normal', and 47% classified sockeye fishing as 'Poor'. During this period Chinook fishing was classified by 42% of respondents as 'Very Good,' 36% as 'Normal,' and 22% as 'Poor' (Table 2).

In the 36 interviews conducted from July 2 through July 14, 22% of fishers classified chum salmon run timing as early, 58% classified it as normal, and 19% classified it as late. During the same time period 0% of fishers classified sockeye salmon run timing as early, 31% classified it as normal, and 69% classified it as late (Table 2).

Of fishers interviewed in July, 75% used drift gillnets only, while almost 6% of those interviewed reported subsistence fishing with only set gillnets. 8% of respondents reported using both drift and setnets during July. 11% of the families fishing reported using rod and reel. Approximately 61% of the interviewed fishers reported using gillnets with 6 inch or larger mesh size. Approximately 22% reported using 6 inch or smaller mesh (Table 4). Close to 6% of families reported using both larger and smaller mesh sizes for the 3 weeks in July.

In 2007, fishers were asked to compare the run timing of each species of subsistence caught salmon to what they considered "Normal" for the majority of years they had fished. Answers to these questions by date and species are recorded in Table 5.

DISCUSSION

Information used to manage the Kuskokwim River fisheries includes: subsistence harvest reports, test fish project summaries, and reports of salmon abundance from weir, sonar, and aerial survey programs as salmon approach clear water tributary spawning grounds. The inseason catch monitoring interviews provide an early indication of salmon abundance and subsistence harvest. Based on this information, comparisons of inseason subsistence catch information can be made among weeks, within a year, and among years (Tables 2–5; Appendix E1–E2). If the majority of interviewed fishers rate fishing as 'Very Good' for a given species and week, this may indicate that a particular run is performing well for that time. Likewise, if the majority of interviewed fishers rate subsistence fishing as 'Poor', the run may be performing poorly for that

time. Now that several years of catch monitoring reports have been collected, it is possible to compare responses among years. Subsistence catch monitoring information, used concurrently with Bethel test fish catch data, provides a general assessment on salmon abundance and run timing.

Because the majority of salmon harvested for subsistence uses in the Kuskokwim River are Chinook salmon, responses to questions about this species are of particular importance to fishery managers (Figure 8). Late Chinook salmon arrival in 2007 influenced participating fishers to delay fishing activity until after the first week of the 2007 surveys, but fishing effort increased over the following 3 weeks (Table 2; Figure 9). Survey responses for the entire season indicated low Chinook salmon harvest relative to fishing effort early in the season and higher harvest relative to effort during late June and early July (Figure 9). As shown in Figure 9, subsistence fishing effort for Chinook salmon was highest during the first 3 weeks of June, but decreased in late June and July. This is consistent with information from 2006, which suggested that the highest subsistence fishing effort for Chinook salmon occurred in June (Figure 10). When compared with run timing data from BTF, the 2007 inseason survey indicates fishing activity occurred throughout the Chinook salmon run with the majority of effort weighted towards the first half of the run (Figure 9; Appendix E2). BTF data, which is one indicator used to assess salmon abundance inseason, shows an increase in Catch Per Unit of Effort (CPUE) from mid June through early July. Data from 2007 indicates higher fishing effort during low Chinook salmon abundance and that harvest was weighted towards the early part of the run. However, record low water levels at the USGS gauging station at Crooked Creek within the Kuskokwim River drainage during 2007 could indicate otherwise.

During survey cycles ending on June 12, 17, and 24, fishers observed that Chinook salmon were avoiding fishing nets and the low water level caused problems with snagging the nets, both of which decreased catchability. Fishers attributed the abnormal Chinook behavior to a combination of low water levels and clear water conditions. Data collected from the U.S. Geological Survey (USGS) water gauge at Crooked Creek and BTF confirm these observations (Doug Bue, Commercial Fisheries Biologist, ADF&G, Bethel; unpublished data). Because of these conditions, high fishing effort early in the season may not have weighted harvest as heavily towards the early portion of the Chinook salmon run as Figure 9 suggests. In addition, data from BTF and other Kuskokwim River salmon monitoring projects suggest that the early portion of the Chinook salmon run was 4–8 days later than average (Figure 11, Doug Molyneaux, Commercial Fisheries Biologist, ADF&G, Anchorage; personal communication). Late run timing could have minimized the effects of high fishing effort early in the season.

Bethel test fish catch numbers from 2001 through 2006 indicate that 50% of the Chinook salmon run passed Bethel between June 16 and 29 (Figure 11). For these years, catch numbers in the BTF and participation among interviewees in the subsistence fishery typically decreased following the 50% passage point for Chinook salmon (Bue and Martz 2006; Martz and Dull 2006). In 2007, the 50% catch date for the Bethel test fishery was June 28, 6 days later than average (Figure 11). The late arrival of Chinook salmon in the Kuskokwim River observed by area subsistence fishers during 2007 is supported by BTF data.

In both 2005 and 2006, information from the Lower Kuskokwim River subsistence catch monitoring project factored into the decision to discontinue the subsistence fishing schedule in mid June. In addition to information from inseason subsistence surveys, data from Kuskokwim River salmon assessment projects (BTF, weirs, and Kalskag tagging) indicated Chinook salmon

abundance was adequate to meet escapement goals and provide sufficient subsistence opportunity. Following presentation of the above information in Working Group meetings, the decision to lift the subsistence fishing schedule was made by ADF&G and USFWS and approved by the Working Group (Dull and Shelden 2007; Shelden and Linderman 2007). Because adequate abundance was anticipated in 2007, the subsistence fishing schedule was not implemented at the onset of the salmon season, but is still available for implementation if anticipated abundance is inadequate to meet escapement goals and provide sufficient opportunity for subsistence fishing.

During the 2007 season, inseason subsistence survey report summaries were presented at Working Group meetings and compared with historical data (Appendices C and D). In conjunction with inseason run assessment projects such as the Bethel test fishery, subsistence surveys were used to determine if a reasonable expectation could be made that adequate Chinook salmon abundance existed to meet escapement goals, provide sufficient subsistence opportunity, and support a Chinook salmon-directed commercial fishery. In June of 2007, ADF&G biologists determined that available data strongly indicated a harvestable surplus of Chinook and sockeye salmon in the Kuskokwim River and recommended a commercial opening to the Working Group. The Working Group voted not to support a commercial opening. The commercial processor also declined to support an opening because of the high abundance of chum salmon relative to Chinook and sockeye salmon. Chum salmon market value and demand at that time was too low to make buying salmon economically feasible for the processor (Smith and Linderman *In prep*)

The comparability of chum, sockeye, and coho subsistence fishing descriptions from the inseason subsistence survey is questionable because the number of families fishing varies from week to week and between years. In 2005, the scope of the project changed to index run timing and relative abundance of salmon through the months of May, June, and July. As a result, information on coho salmon subsistence was not gathered in 2005, 2006 or 2007.

In most years between 2002 and 2006, respondents answered questions about the chum and sockeye salmon runs by the third week of June. However, in 2007, participating subsistence fishers declined to comment on the chum or sockeye salmon runs until the first week of July, either because they felt it was too early to judge the run or because they were not fishing for chum salmon before that time (Appendix E1). The delayed response was likely attributed to subsistence fishers using 8 inch mesh gear to target Chinook salmon and not using smaller mesh gear to target chum and sockeye salmon until later in the season than usual. In surveys ending July 2 to July 14, 67% of participating fishers classified chum salmon fishing as ‘Very good,’ 22% classified it as ‘Normal,’ and 11% classified it as ‘Poor.’ The high abundance of chum salmon indicated by these subsistence surveys is supported by BTF and weir data. Data from salmon monitoring projects throughout the Kuskokwim drainage showed average to record-breaking chum salmon abundance (D. B. Molyneaux, Commercial Fisheries Biologist, ADF&G, Anchorage; unpublished data). Chum salmon catch indices from the 2007 Bethel test fishery were the third highest on record. In 2007 fifty percent of chum salmon had passed by June 5, one day later than both the historical median and average as recorded by BTF, indicating average chum salmon run timing (D. G. Bue, Commercial Fisheries Biologist, ADF&G, Bethel; unpublished data).

In surveys ending July 2 to July 14, 8% of participating fishers classified chum salmon fishing as ‘Very good,’ 44% classified it as ‘Normal,’ and 47% classified it as ‘Poor. BTF and other

Kuskokwim salmon monitoring projects indicate sockeye salmon abundance was above average in 2007. The discrepancy could be because fishers waited longer to fish for sockeye salmon than usual. When they begin fishing for them, the sockeye run had peaked and was declining.

CONCLUSIONS

Management of the Kuskokwim River subsistence salmon fishery is difficult because run assessment information is limited early in the season as salmon begin migrating to spawning grounds. Incorporating information from an inseason subsistence monitoring program into a management process is beneficial toward managing the Kuskokwim subsistence salmon fisheries. Collection of inseason harvest information early in the run is especially beneficial because run assessment information is limited to the Bethel test fish program. Salmon do not begin arriving at escapement monitoring programs in large numbers until mid to late June, or July in the upper Kuskokwim River area.

The program has been well received by the subsistence fishers interviewed each year, who appreciate the opportunity to provide information towards management of Kuskokwim River fisheries. The information gathered by the inseason subsistence catch monitoring project has become very useful to both Working Group members and State and Federal managers in making fishery management decisions. In addition to providing information regarding fish availability, subsistence fishing effort, qualitative catch rates and subsistence fishers' perceptions on salmon run timing, the inseason subsistence catch monitoring program provides feedback from subsistence fishers regarding the subsistence fishing schedule, and subsistence fishing closures around commercial fishing periods. This forum provided an excellent opportunity to discuss subsistence fishing issues with fishers.

Information provided by the inseason subsistence catch monitoring program increased the quality and consistency of information obtained from subsistence fishers in 2007. The number and frequency of interviews of individual fishing families increased the reliability of the salmon catch information. The weekly reporting process resulted in discussions of survey data from the lower Kuskokwim River Area, which drew comments from Working Group members and fishers from the Middle and Upper River areas where surveys were not conducted. These discussions allowed fishers living and fishing upstream of the survey area to be briefed on surveyed fishing family success in the Lower River area and allowed lower river fishers to recognize the difference in fish availability (particularly Chinook salmon) in the middle and upper Kuskokwim River. Specifically, discussions focused on the success of subsistence fishers during the month of June, the abundance of Chinook, chum, and sockeye in the Bethel test fishery, and discontinuation of the subsistence fishing schedule in the Kuskokwim River.

Historically, fishery managers collected inseason information about subsistence activities ad hoc from subsistence fishers. This project has increased the number and frequency of fishing family interviews and has provided a broader representation of subsistence salmon catch information that more accurately reflects the status of the lower Kuskokwim River salmon fishery than information gathered ad hoc. Inseason subsistence catch information was used in conjunction with other information (such as Bethel test fish catch indices) to determine inseason management decisions. Now that multiple years of information have been collected, information on an 'in progress' Kuskokwim River fishery can be compared to prior years' information. In this way, inseason subsistence catch information becomes useful in implementing fishery management actions directed towards achieving escapement goals, providing for a subsistence use priority,

and to provide an opportunity for other fisheries. Timely evaluation of inseason subsistence catch information has the potential to increase the precision of the Kuskokwim River fishery management system by providing information that is used to assess subsistence fishing activity and provide qualitative information on salmon run abundance inseason.

RECOMMENDATIONS

During June, inseason salmon run assessment information is limited to the Bethel test fishery and is generally not available from escapement monitoring programs. Subsistence information from the lower river is beneficial to inseason management decisions.

We recommend that:

1. ONC includes a census of active and inactive fish camps within the Lower Kuskokwim survey area and determine the number of camps that are actively used each week from the total number of camps in the survey area. This information would remain confidential.
2. Interview survey forms should be completely filled out during each interview
3. Gear use trends should be noted in weekly and yearly summaries.
4. Technicians conducting the inseason subsistence surveys should ensure each fisher has a subsistence catch calendar in their possession and that the fisher fills out the calendar on at least a weekly basis.
5. Fishery managers and Working Group members should accompany technicians in order to become more familiar with the program. Visits will have to be prearranged with the foreknowledge and permission of the subsistence fishers visited.
6. Technicians should collect more information on subsistence fishers' perception of water level for the Kuskokwim River during June for later comparison with results from the USGS gauging station at Crooked Creek, in order to assess applicability of water level at Crooked Creek to water level in the lower river.
7. ONC should provide completed data forms (modified to remain confidential) to ADF&G after the season in the event questions arise regarding details on weekly summary sheets.
8. Survey technicians should distribute subsistence salmon catch calendars to interviewed subsistence fishers as needed.

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TABLES AND FIGURES

Table 1.–District 1, Kuskokwim River, commercial fishing periods and subsistence closure hours, 2007.

Period Number	Date	Subdistrict	Hours Fished	Total Hours of Subsistence Closures
1	Aug 01	1B	6	15
2	Aug 03	1A	6	15
3	Aug 06	1B	6	15
4	Aug 08	1A	6	15
5	Aug 10	1B	6	15
6	Aug 13	1A	6	15
7	Aug 14	1B	6	15
8	Aug 16	1A	6	15
9	Aug 17	1B	6	15
10	Aug 20	1A	6	15
11	Aug 22	Full District	6	15
12	Aug 24	Full District	6	15

Table 2.–Kuskokwim River inseason subsistence summary report, summary of salmon fishing, 2007.

Summary of Subsistence Salmon Information Collected by ONC Technicians [a]												
	Number of Families			Chinook Salmon			Chum Salmon			Sockeye Salmon		
Week Ending	Interviewed	Fishing	Not Fishing	Very Good	Normal	Poor	Very Good	Normal	Poor	Very Good	Normal	Poor
Jun 03[b]												
Jun 12	39	28	11	0	8	20	[c]	[c]	[c]	[c]	[c]	[c]
Jun 17	40	33	7	0	10	23	[c]	[c]	[c]	[c]	[c]	[c]
Jun 24	44	40	4	0	14	26	[c]	[c]	[c]	[c]	[c]	[c]
Jul 02	36	20	12	9	9	2	16	4	0	0	8	12
Jul 08	33	10	23	6	4	0	8	2	0	3	7	0
Jul 14	33	6	27	0	0	6	0	2	4	0	1	5
Total [d]	225											
Average	38	23	14	3	8	13	8	3	1	1	5	6

[a] Represents responses from the question "Compared with this time in a "Normal" year how were catch rates for salmon this week?"

[b] No interviews were conducted the week of June 03, but a report was given on the status of survey preparation.

[c] Indicates interviewees declined to comment.

[d] Represents the total number of interviews conducted during the survey year, most families were interviewed more than once.

Table 3.–Kuskokwim River subsistence salmon summary, quality of fishing report, 2007.

Summary of Subsistence Salmon Information Collected by ONC Technicians [a]												
Week Ending	Number		% Fishing	% Describing Chinook Fishing as			% Describing Chum Fishing as			% Describing Sockeye Fishing as		
	Interviewed	Fishing		Very Good	Normal	Poor	Very Good	Normal	Poor	Very Good	Normal	Poor
Jun 03[b]												
Jun 12	39	28	59%	0%	29%	71%	[c]	[c]	[c]	[c]	[c]	[c]
Jun 17	40	33	83%	0%	30%	70%	[c]	[c]	[c]	[c]	[c]	[c]
Jun 24	44	40	91%	0%	35%	65%	[c]	[c]	[c]	[c]	[c]	[c]
Jul 02	36	20	56%	45%	45%	10%	80%	20%	0%	0%	40%	60%
Jul 08	33	10	30%	60%	40%	0%	80%	20%	0%	30%	70%	0%
Jul 14	33	6	18%	0%	0%	100%	0%	33%	67%	0%	17%	83%
Total [d]	225											
Average	38	23										

[a] Represents responses from the question “Compared with this time in a “Normal” year how were catch rates for salmon this week?"

[b] No interviews were conducted the week of June 03, but a report was given on the status of survey preparation.

[c] Indicates respondents declined to comment.

[d] Represents the total number of interviews conducted during the survey year, most families were interviewed more than once.

Table 4.–Kuskokwim River inseason subsistence survey fishing gear use summary, 2007.

Summary of Subsistence Salmon Information Collected by ONC Technicians									
Week	Number of Families		Fishing with Only		Using Both		Fishing with Only		Using Both
Ending	Interviewed	Fishing	Driftnet	Setnet	Drift & Setnet	Rod & Reel	> 6" mesh	< 6" mesh	>6" and <6"
Jun 03 [a]									
Jun 12	39	28	13	4	11	0	21	1	6
Jun 17	40	33	17	4	12	0	26	1	6
Jun 24	44	40	29	4	7	0	35	1	4
Jul 02	36	20	15	2	3	0	16	4	0
Jul 08	33	10	10	0	0	0	5	3	2
Jul 14	33	6	2	0	0	4	1	1	0
Total [b]	225								
Average	38	23	14	2	6	1	17	2	4

[a] No interviews were conducted the week of June 03, but a report was given on the status of survey preparation.

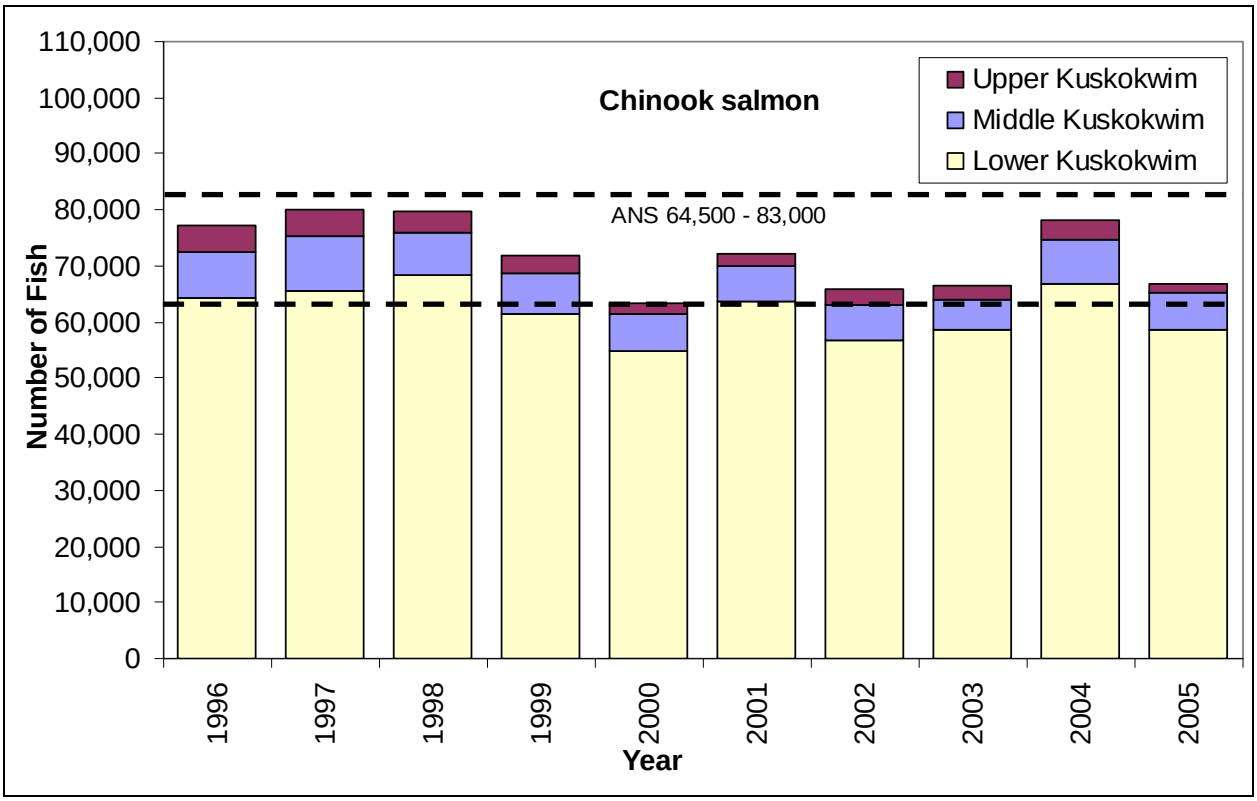
[b] Represents the total number of interviews conducted during the survey year, most families were interviewed more than once.

Table 5.–Kuskokwim River subsistence summary report, run timing, 2007.

Summary of Subsistence Salmon Information Collected by ONC Technicians												
Week	Number of Families			Chinook Salmon[a]			Chum Salmon			Sockeye Salmon		
Ending	Interviewed	Fishing	Not Fishing	Early	Normal	Late	Early	Normal	Late	Early	Normal	Late
Jun 03 [a]												
Jun 12	39	28	11	2	6	12	[b]	[b]	[b]	[b]	[b]	[b]
Jun 17	40	33	7	0	2	25	[b]	[b]	[b]	[b]	[b]	[b]
Jun 24	44	40	4	0	5	35	0	12	28	0	8	32
Jul 02	36	20	12	0	5	15	4	10	6	0	8	12
Jul 08	33	10	23	0	0	10	4	6	0	0	2	8
Jul 14	33	6	27	0	0	6	0	5	1	0	1	5
Total	225	137										
Average	38	23	14	0	3	17	2	8	9	0	5	14

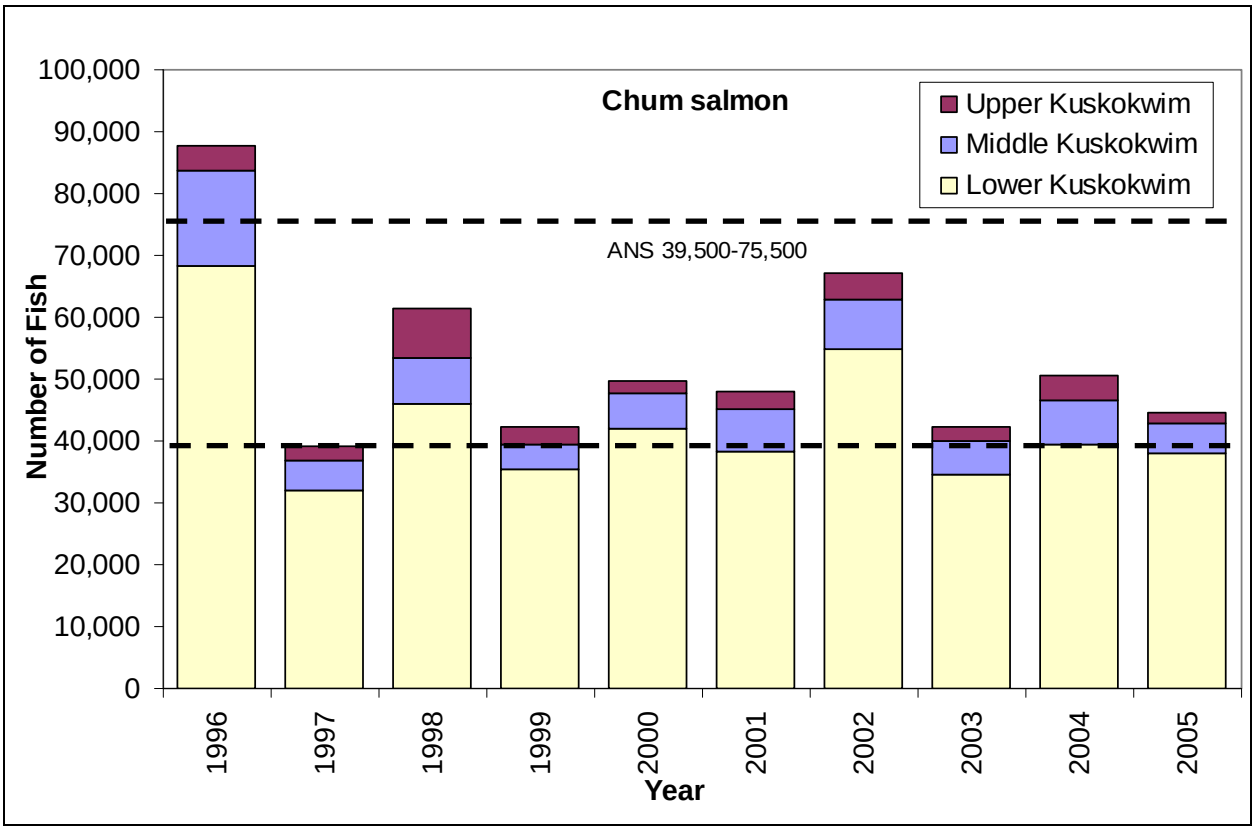
[a] No interviews were conducted the week of June 03, but a report was given on the status of survey preparation.

[b] Indicates respondents declined to comment.



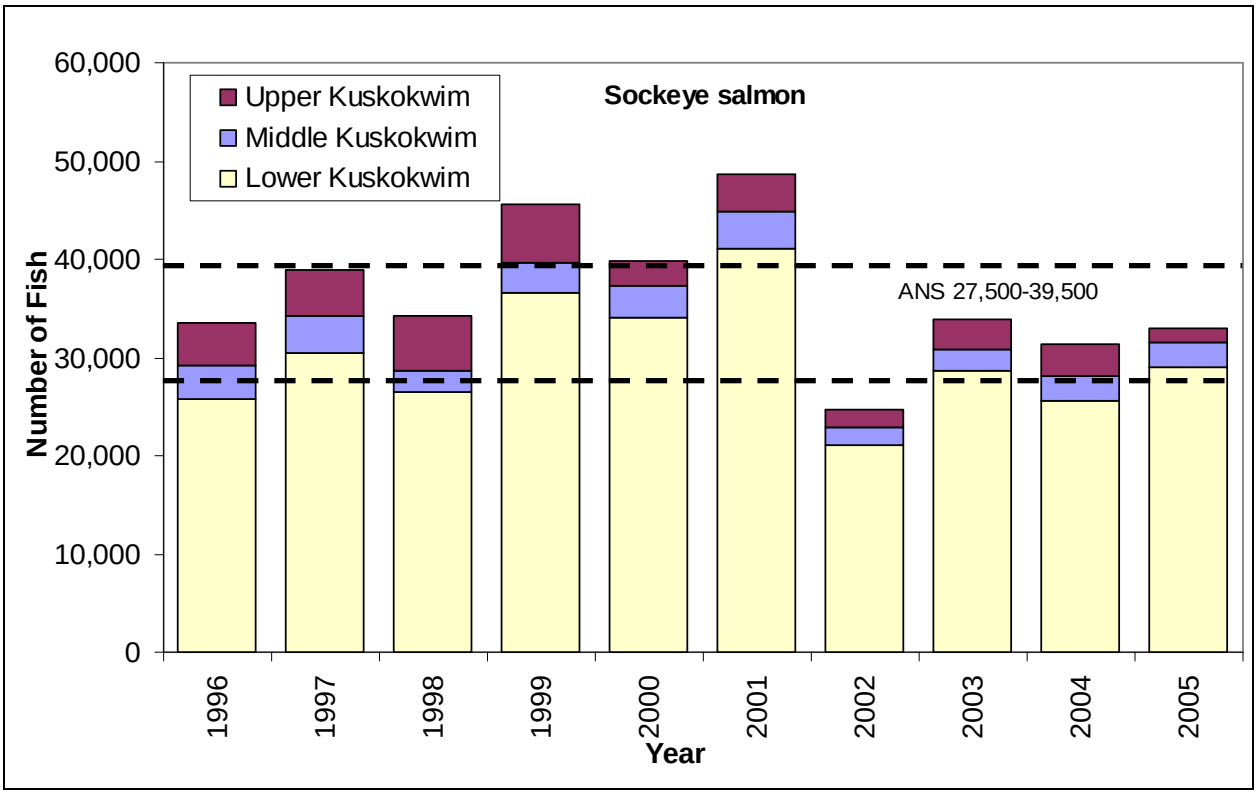
Note: ANS = amount necessary for subsistence.

Figure 1.–Subsistence Chinook salmon harvest as reported by postseason harvest surveys, Kuskokwim River, 1996–2005.



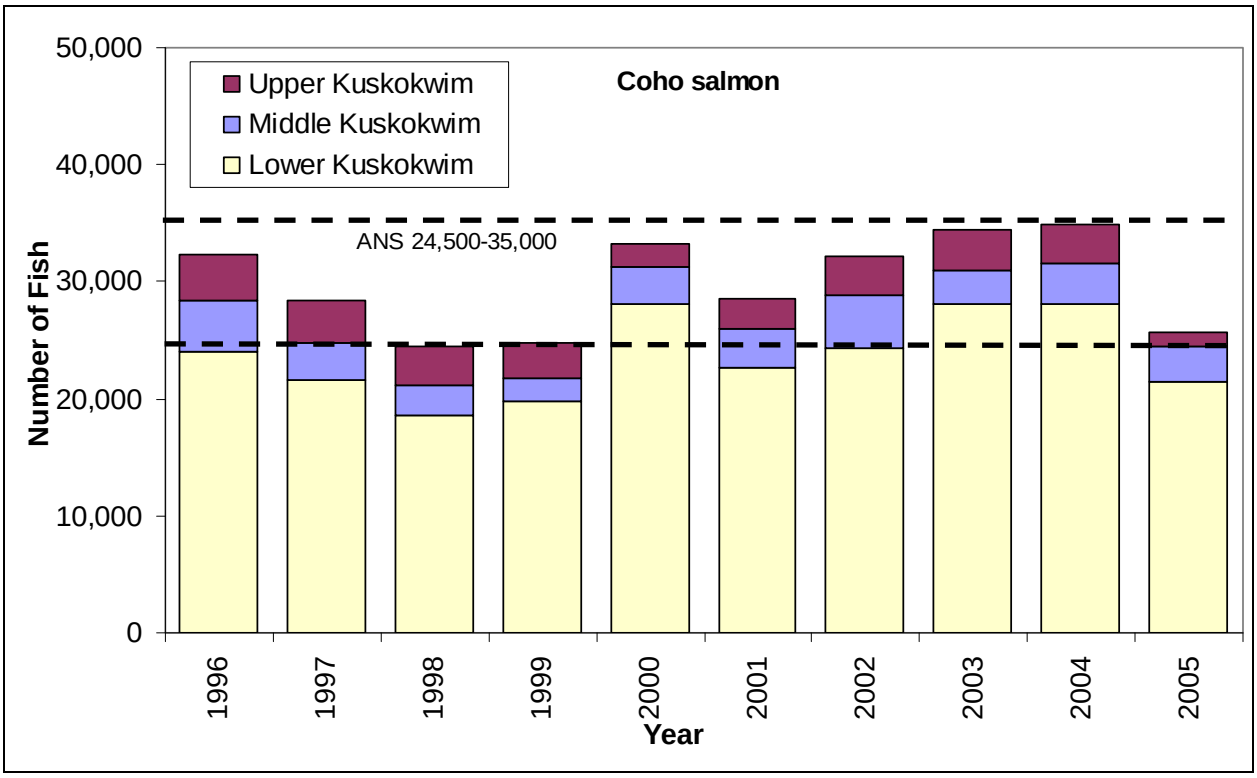
Note: ANS = amount necessary for subsistence.

Figure 2.–Subsistence chum salmon harvest as reported by postseason harvest surveys, Kuskokwim River, 1996–2005.



Note: ANS = amount necessary for subsistence.

Figure 3.–Subsistence sockeye salmon harvest as reported by postseason harvest surveys, Kuskokwim River, 1996–2005.



Note: ANS = amount necessary for subsistence.

Figure 4.–Subsistence coho salmon harvest as reported by postseason harvest surveys, Kuskokwim River, 1996–2005.

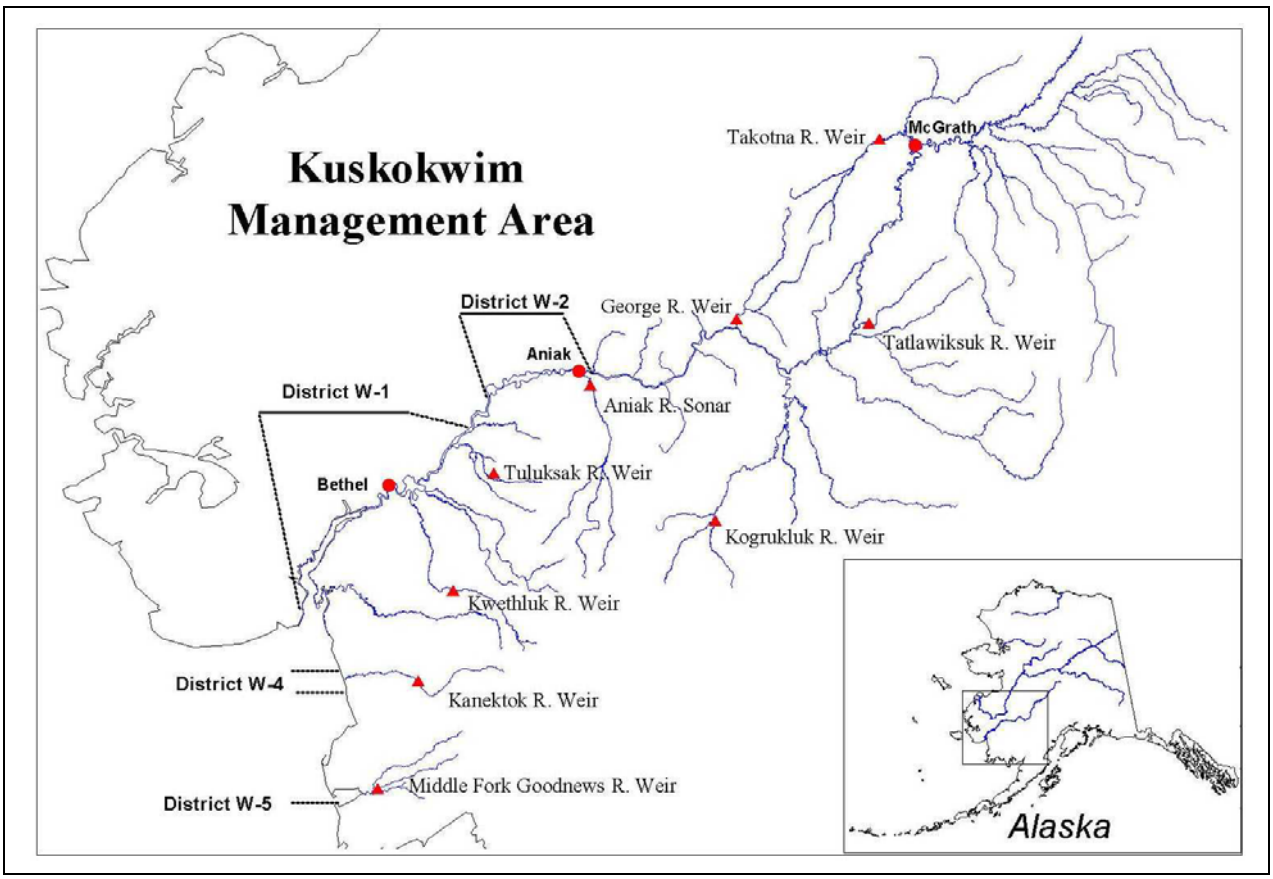
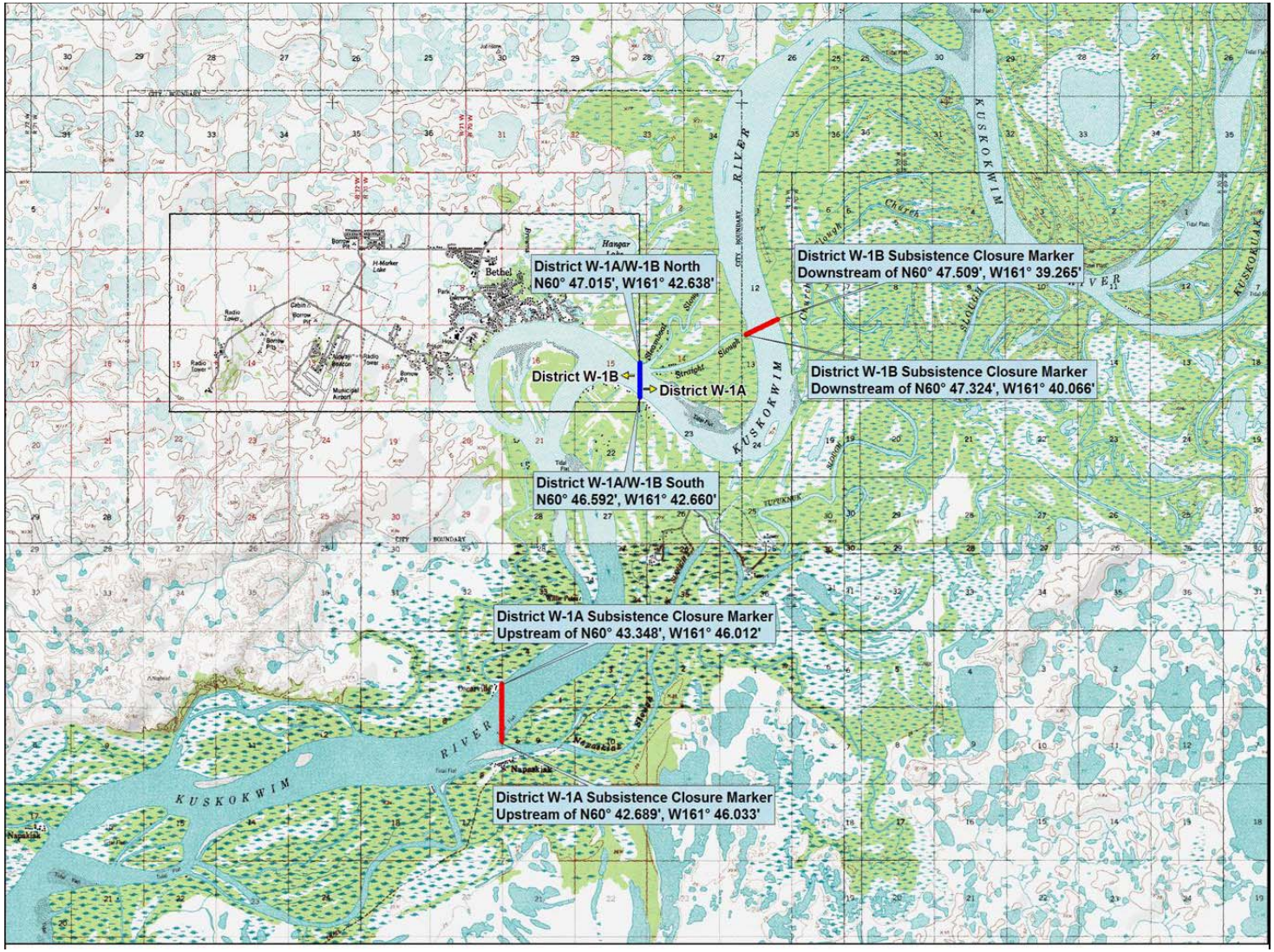


Figure 5.–Kuskokwim Management Area.



Note: Bethel Area commercial salmon sub-district W-1A and W-1B boundary and subsistence salmon fishing closure boundaries during sub-district W1-A and W-1B commercial openings (ADF&G 2004).

Source: Map not to scale. © 2002 DeLorme (www.delorme.com) 3-D TopoQuads®

Figure 6.–District 1, Subdistricts 1-A and 1-B.

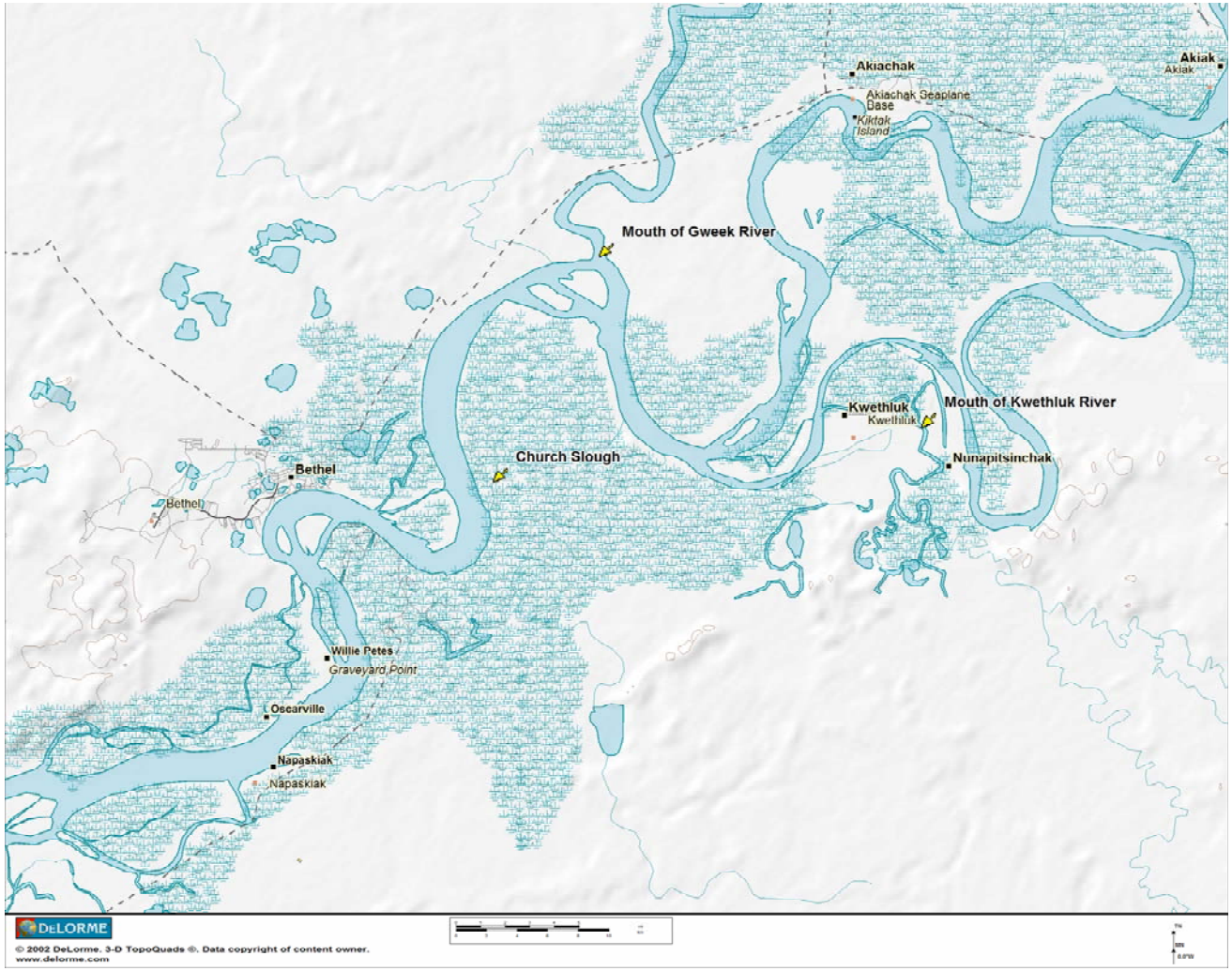
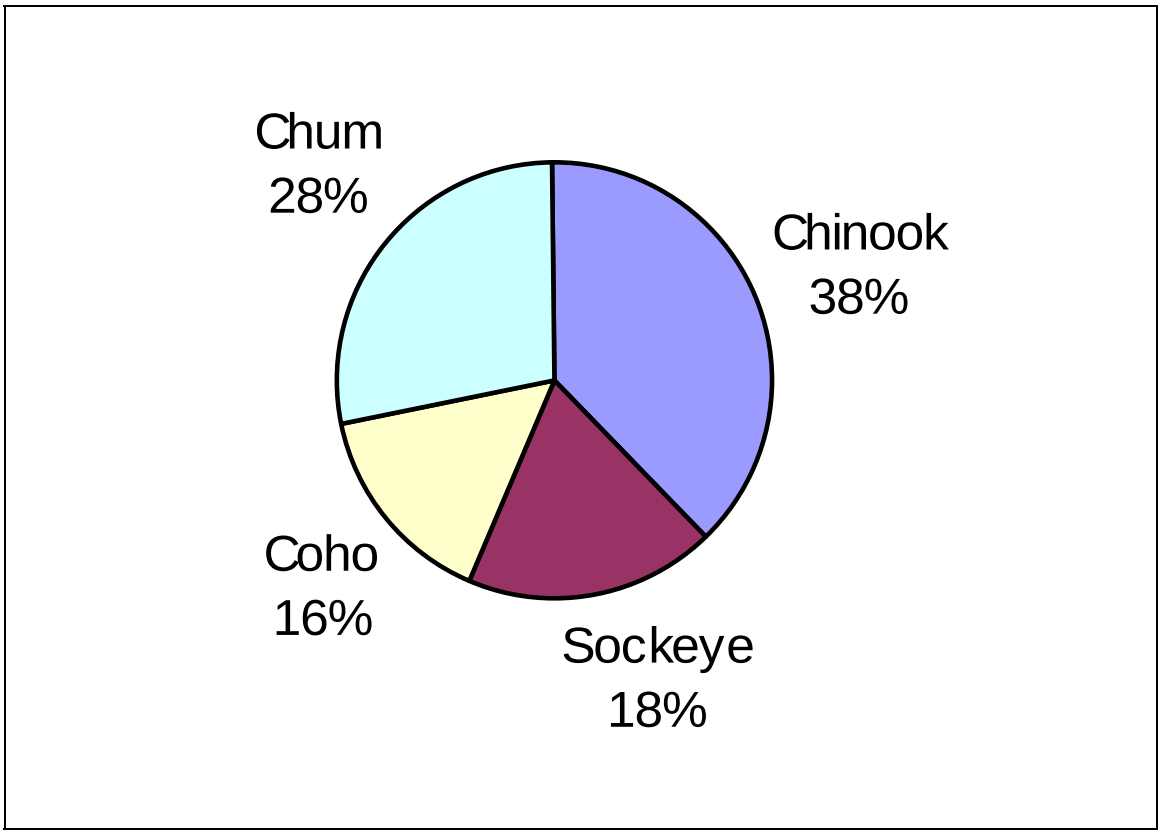


Figure 7.–Subsistence survey area, 2007.



Source: Fall et al. 2007.

Figure 8.–Composition of subsistence harvest by species as reported by postseason harvest surveys, Kuskokwim Management Area, 10 year average, 1996–2005.

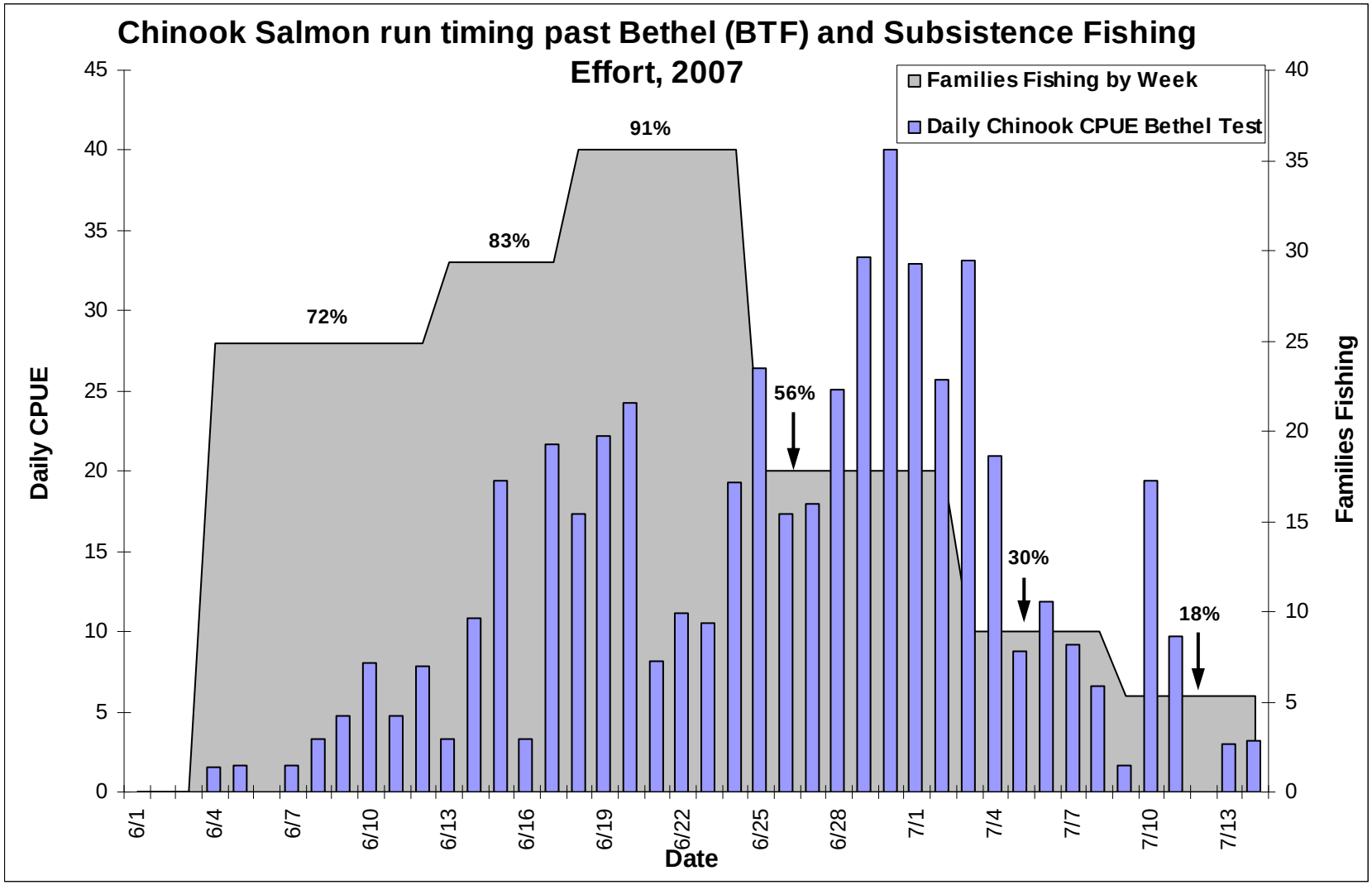


Figure 9.–Chinook salmon run timing past Bethel as estimated by CPUE in the Bethel test fishery, compared with fishing effort by week as shown by the inseason subsistence monitoring program. Percentages on graph represent the number of families fishing out of total families interviewed.

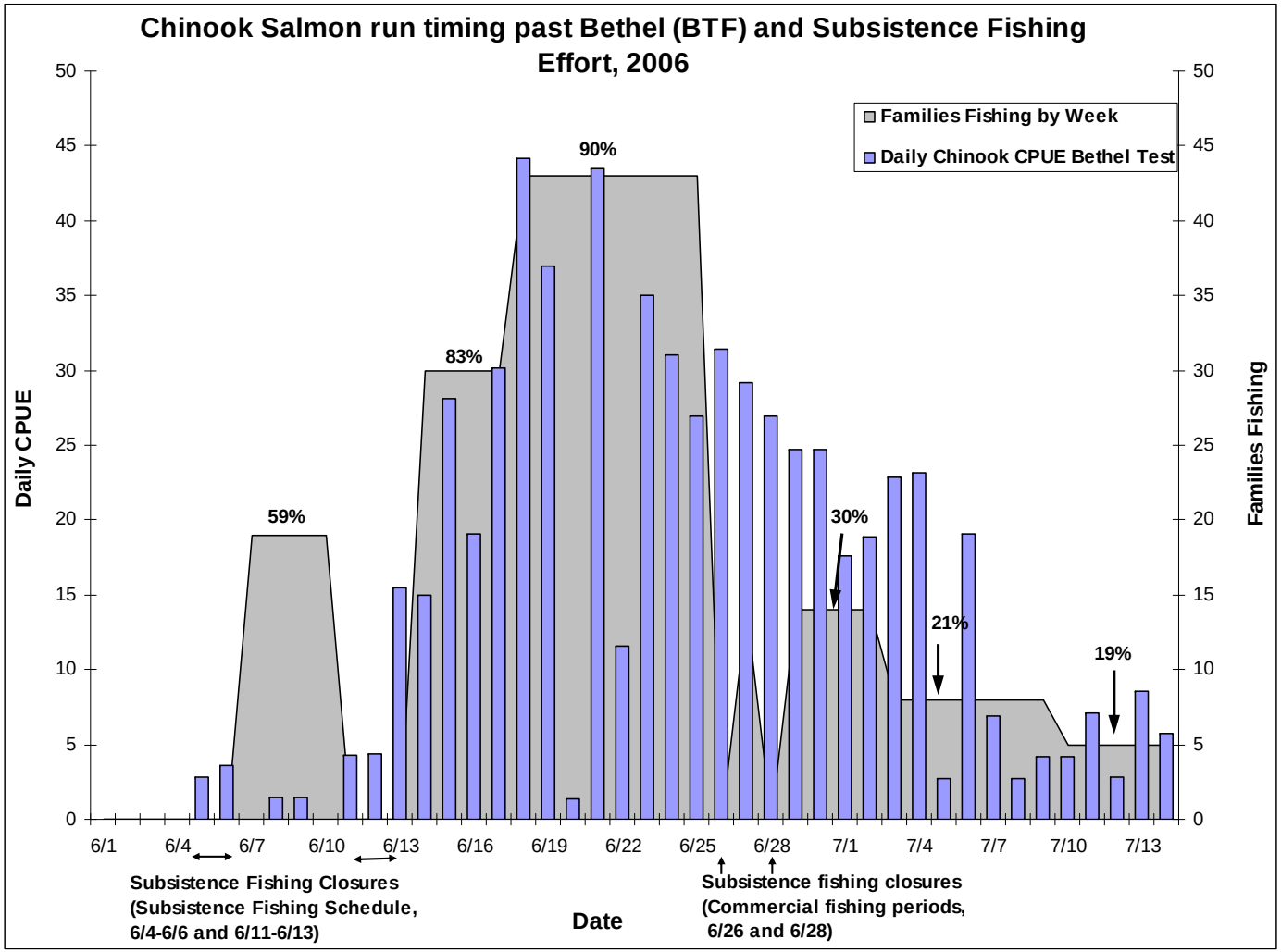


Figure 10.–Chinook salmon run timing past Bethel as estimated by CPUE in the Bethel test fishery, compared with fishing effort by week as shown by the inseason subsistence monitoring program. Percentages on graph represent the number of families fishing out of total families interviewed.

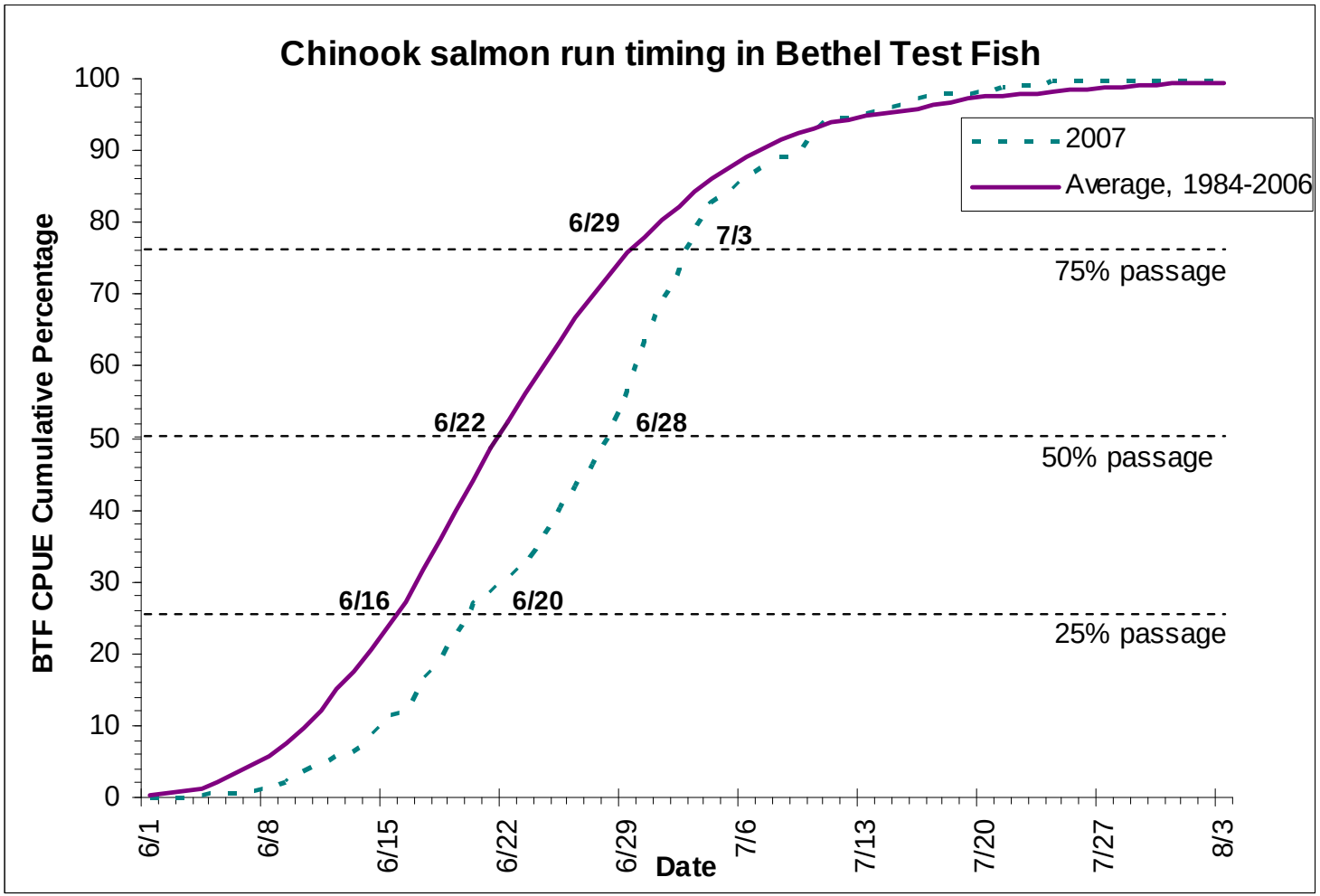


Figure 11.–2007 Chinook salmon run timing past Bethel, as indicated by Bethel Test Fish.

APPENDIX A. KUSKOKWIM RIVER SALMON UTILIZATION

Appendix A1.–Historical utilization of Chinook salmon in the Kuskokwim River.

Year	Commercial Harvest[a] Annual	Commercial Harvest[a] 10 yr Ave	Subsistence Harvest[b,c] Annual	Subsistence Harvest[b,c] 10 yr Ave	Test-Fish Harvest	Sport Fish Harvest	Total Utilization	10 Year Average
1960	5,969		18,887				24,856	
1961	18,918		28,934				47,852	
1962	15,341		13,582				28,923	
1963	12,016		34,482				46,498	
1964	17,149		29,017				46,166	
1965	21,989		24,697				46,686	
1966	25,545		49,325		285		75,155	
1967	29,986		59,913		766		90,665	
1968	34,278		32,942		608		67,828	
1969	43,997	22,519	40,617	33,240	833		85,447	56,008
1970	39,290	25,851	69,612	38,312	857		109,759	64,498
1971	40,274	27,987	43,242	39,743	756		84,272	68,140
1972	39,454	30,398	40,396	42,424	756		80,606	73,308
1973	32,838	32,480	39,093	42,885	577		72,508	75,909
1974	18,664	32,632	27,139	42,698	1,236		47,039	75,997
1975	22,135	32,646	48,448	45,073	704		71,287	78,457
1976	30,735	33,165	58,606	46,001	1,206		90,547	79,996
1977	35,830	33,750	56,580	45,668	1,264	33	93,707	80,300
1978	45,641	34,886	36,270	46,000	1,445	116	83,472	81,864
1979	38,966	34,383	56,283	47,567	979	74	96,302	82,950
1980	35,881	34,042	59,892	46,595	1,033	162	96,968	81,671
1981	47,663	34,781	61,329	48,404	1,218	189	110,399	84,284
1982	48,234	35,659	58,018	50,166	542	207	107,001	86,923
1983	33,174	35,692	47,412	50,998	1,139	420	82,145	87,887
1984	31,742	37,000	56,930	53,977	231	273	89,176	92,100
1985	37,889	38,576	43,874	53,519	79	85	81,927	93,164
1986	19,414	37,443	51,019	52,761	130	49	70,612	91,171
1987	36,179	37,478	67,325	53,835	384	355	104,243	92,225
1988	55,716	38,486	70,943 [d]	57,303	576	528	127,763	96,654
1989	43,217	38,911	81,175	59,792	543	1,218	126,153	99,639
1990	53,504	40,673	85,976	62,400	512	394	140,386	103,981
1991	37,778	39,685	85,556	64,823	117	401	123,852	105,326
1992	46,872	39,549	64,794	65,500	1,380	367	113,413	105,967
1993	8,735	37,105	87,513	69,511	2,483	587	99,318	107,684
1994	16,211	35,552	93,243	73,142	1,937	1,139	112,530	110,020
1995	30,846	34,847	96,435	78,398	1,421	541	129,243	114,751
1996	7,419	33,648	78,062	81,102	247	1,432	87,160	116,406

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Year	Commercial Harvest[a] Annual	Commercial Harvest[a] 10 yr Ave	Subsistence Harvest[b,c] Annual	Subsistence Harvest[b,c] 10 yr Ave	Test-Fish Harvest	Sport Fish Harvest	Total Utilization	10 Year Average
1997	10,441	31,074	81,577	82,527	332	1,227	93,577	115,340
1998	17,359	27,238	81,264	83,560	210	1,434	100,267	112,590
1999	4,705	23,387	73,194	82,761	98	252	78,249	107,800
2000	444	18,081	64,893	80,653	64	105	65,506	100,312
2001	90	14,312	73,610	79,459	86	290	74,076	95,334
2002	72	9,632	66,807	79,660	288	319	67,486	90,741
2003	158	8,775	67,788	77,687	409	401	68,756	87,685
2004	2,300	7,383	80,065	76,370	691	857	83,913	84,823
2005	4,784	4,777	70,393 [e]	73,765	608	572	76,357	79,535
2006	2,777	4,313	63,177 [e]	72,277	352	444	66,750	77,494
2007	179	3,287	[f]	71,243	305	[f]	484	68,184
10 Yr Avg (1997–2006)	4,313		72,277		314	590	77,494	

[a] Districts 1 and 2 also includes harvests in District 3 from 1960 to 1965.

[b] Estimated subsistence harvest expanded from villages surveyed.

[c] Discrepancies in subsistence harvest numbers by area may be attributable to changes in geographic area definitions over time.

[d] Beginning in 1988, estimates are based on a new formula so data since 1988 is not comparable with previous years.

[e] Preliminary estimate as of February 2008.

[f] Data not yet available.

Appendix A2.–Historical utilization of chum salmon in the Kuskokwim River.

Year	Commercial Harvest[a] Annual	Commercial Harvest[a] 10 yr Ave	Subsistence Harvest[b] Annual	Subsistence Harvest[b] 10 yr Ave	Test-Fish Harvest	Sport Fish Harvest	Total Utilization	10 Year Average
1960	0		301,753 [c]				301,753	
1961	0		179,529 [c]				179,529	
1962	0		161,849 [c]				161,849	
1963	0		137,649 [c]				137,649	
1964	0		190,191 [c]				190,191	
1965	0		250,878 [c]				250,878	
1966	0		175,735 [c]		502 [d]		176,237	
1967	148		208,445 [c]		338		208,931	
1968	187		275,008 [c]		562		275,757	
1969	7,165	750	204,105 [c]		384		211,654	209,443
1970	1,664	916	246,810 [c]	203,020	1,139 [d]		249,613	204,229
1971	68,914	7,808	116,391 [c]	196,706	254		185,559	204,832
1972	78,619	15,670	120,316 [c]	192,553	486		199,421	208,589
1973	148,746	30,544	179,259 [c]	196,714	675		328,680	227,692
1974	171,887	47,733	277,170 [c]	205,412	2,021		451,078	253,781
1975	184,171	66,150	176,389 [c]	197,963	1,062		361,622	264,855
1976	177,864	83,937	223,792 [c]	202,769	2,101		403,757	287,607
1977	248,721	108,794	198,355 [c]	201,760	576	129	447,781	311,492
1978	248,656	133,641	118,809 [c]	186,140	2,153	555	370,173	320,934
1979	261,874	159,112	161,239 [c]	181,853	412	259	423,784	342,147
1980	483,751	207,320	165,172 [c]	173,689	2,058	324	651,305	382,316
1981	418,677	242,297	157,306 [c]	177,781	1,793	598	578,374	421,598
1982	278,306	262,265	190,011 [c]	184,750	504	1125	469,946	448,650
1983	276,698	275,061	146,876 [c]	181,512	1,069	922	425,565	458,339
1984	423,718	300,244	142,542 [c]	168,049	1,186	520	567,966	470,027
1985	199,478	301,774	94,750	159,885	616	150	294,994	463,365

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Year	Commercial Harvest[a] Annual	Commercial Harvest[a] 10 yr Ave	Subsistence Harvest[b] Annual	Subsistence Harvest[b] 10 yr Ave	Test-Fish Harvest	Sport Fish Harvest	Total Utilization	10 Year Average
1986	309,213	314,909	141,931 [c]	151,699	1,693	245	453,082	468,297
1987	574,336	347,471	70,709	138,935	2,302	566	647,913	488,310
1988	1,381,674	460,773	151,967 [e]	142,250	4,379	764	1,538,784	605,171
1989	749,182	509,503	139,672	140,094	2,082	2,023	892,959	652,089
1990	461,624	507,291	126,509	136,227	2,107	533	590,773	646,036
1991	431,802	508,603	93,077	129,804	931	378	526,188	640,817
1992	344,603	515,233	96,491	120,452	15,330	608	457,032	639,526
1993	43,337	491,897	59,394	111,704	8,451	359	111,541	608,123
1994	271,115	476,636	72,022	104,652	11,998	1,280	356,415	586,968
1995	605,918	517,280	67,861	101,963	17,473	226	691,478	626,617
1996	207,877	507,147	88,966	96,667	2,864	280	299,987	611,307
1997	17,026	451,416	39,987	93,595	790	86	57,889	552,305
1998	207,809	334,029	63,537	84,752	1,140	291	272,777	425,704
1999	23,006	261,412	43,601	75,145	562	180	67,349	343,143
2000	11,570	216,406	51,696	67,663	1,038	26	64,330	290,499
2001	1,272	173,353	49,874	63,343	1,743	112	53,001	243,180
2002	1,900	139,083	69,019	60,596	2,666	53	73,638	204,841
2003	2,764	135,026	43,320	58,988	1,713	53	47,850	198,471
2004	20,429	109,957	52,374	57,024	1,810	84	74,697	170,300
2005	69,139	56,279	46,777 [f]	54,915	4,459	500	120,875	113,239
2006	44,070	39,899	64,206 [f]	52,439	3,547	13	111,836	94,424
2007	10,783	39,274	[g]	53,823	3,237	[g]	14,020	90,037
10 Yr Avg (1997–2006)	39,899		52,439		1,947	140	94,424	

[a] Districts 1 and 2 only; no chum harvests were reported in District 3.
[b] Estimated subsistence harvest expanded from villages surveyed.
[c] Includes small numbers of small Chinook, sockeye and coho salmon.
[d] Includes small numbers of sockeye.
[e] Beginning in 1988, estimates are based on a new formula so data since 1988 is not comparable with previous years.
[f] Preliminary estimate as of February 2008.
[g] Data not yet available.

Appendix A3.–Historical utilization of sockeye salmon in the Kuskokwim River.

	Commercial Harvest		Subsistence Harvest[a,b,c]		Test Fish	Sport Fish	Total	10 Year
Year	Annual	10 yr Ave	Annual	10 yr Ave	Harvest	Harvest	Utilization	Average
1960								
1961								
1962								
1963								
1964								
1965								
1966								
1967								
1968								
1969	322	322					322	
1970	117	220					117	
1971	2,606	1,015					2,606	
1972	102	787					102	
1973	369	703					369	
1974	136	609					136	
1975	23	525					23	
1976	2,971	831					2,971	
1977	9,379	1,781					9,379	
1978	733	1,676					733	
1979	1,054	1,749					1,054	
1980	360	1,773					360	
1981	48,375	6,350					48,375	
1982	33,154	9,655					33,154	
1983	68,855	16,504				41	68,896	16,508
1984	48,575	21,348					48,575	21,352
1985	106,647	32,010				72	106,719	32,022

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Year	Commercial Harvest Annual	Commercial Harvest 10 yr Ave	Subsistence Harvest[a,b,c] Annual	Subsistence Harvest[a,b,c] 10 yr Ave	Test Fish Harvest	Sport Fish Harvest	Total Utilization	10 Year Average
1986	95,433	41,257				196	95,629	41,287
1987	136,602	53,979				217	136,819	54,031
1988[b]	92,025	63,108				291	92,316	63,190
1989	42,747	67,277	35,224			33	78,004	70,885
1990	84,870	75,728	36,274			61	121,205	82,969
1991	108,946	81,785	52,982			38	161,966	94,328
1992	92,218	87,692	32,065			131	124,414	103,454
1993	27,008	83,507	49,347			348	76,703	104,235
1994	49,365	83,586	37,159			359	86,883	108,066
1995	92,500	82,171	27,792			95	120,387	109,433
1996	33,878	76,016	34,214			315	68,407	106,710
1997	21,989	64,555	40,078			423	62,490	99,277
1998	60,906	61,443	35,426	38,056		178	96,510	99,697
1999	16,976	58,866	46,677	39,201	503	54	64,210	98,317
2000	4,130	50,792	41,783	39,752	413	46	46,372	90,834
2001	84	39,905	50,065	39,461	510	231	50,890	79,727
2002	84	30,692	25,499	38,804	228	42	25,853	69,870
2003	282	28,019	34,452	37,314	646	140	35,520	65,752
2004	9,748	24,058	32,433	36,842	742	400	43,323	61,396
2005	27,645	17,572	34,129[d]	37,476	1,062	636	63,472	55,705
2006	12,618	15,446	30,226[d]	37,077	519	231	43,594	53,223
2007	703	13,318	[e]	36,743	488	[e]	1,191	47,094
10 Yr Avg (1997–2006)	15,446		37,077		618[f]	198	99,697	

[a] Estimated subsistence harvest expanded from villages surveyed.

[b] Beginning in 1988, estimates are based on a new formula so data since 1988 is not comparable with previous years.

[c] Discrepancies in subsistence harvest numbers by area may be attributable to changes in geographic area definitions over time.

[d] Preliminary estimate as of February 2008.

[e] Data not yet available.

[f] Average of test fish harvest 1999–2006.

Appendix A4.–Historical utilization of coho salmon in the Kuskokwim River.

	Commercial Havest		Subsistence Harvest[a,b,c]		Test Fish	Sport Fish	Total	10 Year
Year	Annual	10 Yr Ave	Annual	10 Yr Ave	Harvest	Harvest	Utilization	Average
1960	2,498							
1961	5,044							
1962	12,432							
1963	15,660							
1964	28,613							
1965	12,191							
1966	22,985							
1967	56,313							
1968	127,306							
1969	83,765	36,681						
1970	38,601	40,291						
1971	5,253	40,312						
1972	22,579	41,327						
1973	130,876	52,848						
1974	147,269	64,714						
1975	81,945	71,689						
1976	88,501	78,241						
1977	241,364	96,746						
1978	213,393	105,355						
1979	219,060	118,884						
1980	222,012	137,225						
1981	211,251	157,825						
1982	447,117	200,279						
1983	196,287	206,820				1,375	197,662	
1984	623,447	254,438				1,442	624,889	
1985	335,606	279,804				136	335,742	

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Year	Commercial Harvest Annual	Commercial Harvest 10 Yr Ave	Subsistence Harvest[a,b,c] Annual	Subsistence Harvest 10 Yr Ave	Test Fish Harvest	Sport Fish Harvest	Total Utilization	10 Year Average
1986	659,988	336,953				1,222	661,210	
1987	399,467	352,763				1,767	401,234	
1988[b]	524,296	383,853				927	525,223	
1989	479,856	409,933	52,857			2,459	535,172	
1990	410,332	428,765	44,786			581	455,699	
1991	500,935	457,733	50,369			1,003	552,307	
1992	666,170	479,638	40,167			1,692	708,029	
1993	610,739	521,084	31,737			980	643,456	
1994	724,689	531,208	33,050			1,925	759,664	
1995	471,461	544,793	36,276			1,497	509,234	
1996	937,299	572,524	32,742			3,423	973,464	
1997	130,803	545,658	29,035		33,703 [d]	2,408	195,949	585,820
1998	210,481	514,277	24,864	37,588		2,419	237,764	557,074
1999	23,593	468,650	25,004	34,803	213 [e]	1,998	50,808	508,637
2000	261,379	453,755	33,786	33,703	2,828 [e]	1,689	299,682	493,036
2001	192,998	422,961	29,504	31,617	1,723 [e]	1,204	225,429	460,348
2002	83,463	364,691	32,780	30,878	2,484 [e]	2,030	120,757	401,621
2003	284,064	332,023	35,240	31,228	2,377 [e]	3,244	324,925	369,768
2004	433,809	302,935	35,735	31,497	2,259 [e]	4,996	476,799	341,481
2005	142,319	270,021	27,613 [f]	30,630	1,499 [e]	3,539	174,970	308,055
2006	185,598	194,851	30,706 [f]	30,427	1,186 [e]	1,474	218,964	232,605
2007	141,049	195,875	[g]	30,581	1,821 [e]	[g]	142,870	
10 Yr Avg (1997–2006)	194,851		30,427		1,821 [h]	2,500	232,605	

[a] Estimated subsistence harvest expanded from villages surveyed.

[b] Beginning in 1988, estimates are based on a new formula so data since 1988 is not comparable with previous years.

[c] Discrepancies in subsistence harvest numbers by area may be attributable to changes in geographic area definitions over time.

[d] Includes Bethel and Aniak test fisheries.

[e] Bethel test fishery only.

[f] Preliminary estimate as of February 2008.

[g] Data not yet available.

[h] Average of test fish harvest 1999–2006.

APPENDIX B. EXAMPLE OF SURVEY INSTRUMENT

Appendix B1.–Example of Kuskokwim River subsistence salmon fishing survey form.

Family Name: Lastname Firstname _____ Community _____ Fishcamp Location _____

Date family started salmon fishing this year (month, day) _____ Primary Subsistence Salmon Fishing Areas _____

What are your family's salmon harvest goals this year ? (number of salmon) King _____, (Chinook) Chum _____, Sockeye _____, (" Red ")

		Salmon Fishing Gear Used This Week						Compared with this time in a "NORMAL" year, how were catch rates for salmon this week?									Does the salmon run appear to be running early, late, or normal?								
		Net Type		Mesh ?				King Salmon			Chum Salmon			Sockeye Salmon			King Salmon			Chum Salmon			Sockeye Salmon		
Staff initials	Week Ending	Drift Net	Set Net	6" or Less	More than 6"	Rod Reel	Fish Wheel	Very Good	OK Normal	Poor	Very Good	OK Normal	Poor	Very Good	OK Normal	Poor	Early	Normal	Late	Early	Normal	Late	Early	Normal	Late
	28-May																								
	4-Jun																								
	11-Jun																								
	18-Jun																								
	25-Jun																								
	2-Jul																								
	9-Jul																								
	16-Jul																								
	31-Jul																								

Comments

Staff initials	Week Ending	Few fish ? Lot of fish ? Weather affecting fishing? Water levels? Size of Fish ? Fish look healthy ? Fishing harder this year ? Drying condidtions? Fishing in more places/areas than usual
	28-May	
	4-Jun	
	11-Jun	
	18-Jun	
	25-Jun	
	2-Jul	
	9-Jul	
	16-Jul	
	31-Jul	

Were your family's salmon harvest goals achieved ? Kings _____, Chum _____, Sockeye_____.

When did your family stop subsistence fishing for: King Salmon_____, (month, day) Chum Salmon_____, (month, day) Sockeye Salmon_____, (month, day)

APPENDIX C. KUSKOKWIM RIVER INSEASON SUBSISTENCE SALMON CATCH MONITORING WEEKLY REPORTS

Appendix C1.–Kuskokwim River inseason subsistence salmon harvest weekly report, Orutsararmiut Native Council, June 4, 2007.

Fishing ending the week of June 3, 2007.

Families Surveyed	Families Not Fishing	Using Driftnets	Using Setnets	Both	Gillnets More than 6" mesh	Gillnets less than 6" mesh	Both
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Compared with this time in a normal year, how are catch rates for salmon this week?

Chinook			Chum			Sockeye		
Very Good	Normal	Poor	Very Good	Normal	Poor	Very Good	Normal	Poor
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Does the salmon run appear to be running early, late, or normal?

Chinook			Chum			Sockeye		
Early	Normal	Late	Early	Normal	Late	Early	Normal	Late
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Comments: No official surveys have been conducted this weekend. Starting Friday we organized our survey forms, put together ASL kits, and cleaned up the boat. Motor difficulties however prevented actually getting on the water until Sunday. Efforts focused on re-contacting old and recruiting new ASL samplers as families prepare their camps for their harvests for the coming season. Not a lot of activity in camps yet, though it is expected to pick up to full speed over the coming week. Observing the fishing activity on the river from the mouth of Church slough down to Oscarville, there were 24 set nets, and drifting activity appeared light with only 2–3 boats fishing at the regular sites. Due to the low water for this time of year, a lot of snags have been reported.

Chinook: We spoke to several families on how fishing has been so far this season. Reports of setnet catches were averaging about one Chinook salmon a day through the later half of the week. Drifters reported catching one or two per couple drifts and that most of these were seen to be large females. Water levels have been extremely low since breakup and the water is very clear, which is known to affect catch numbers due to fish being able to see and avoid the nets. No families reported fishing as very good. No families reported fishing as normal. No families reported fishing as poor. As for comments about the return so far, everyone said it is still too early in the season to asses how the run is doing.

Chum: N/A

Sockeye: N/A

Appendix C2.–Kuskokwim River inseason subsistence salmon harvest weekly report, Orutsararmiut Native Council, June 13, 2007.

Fishing ending the week of June 12, 2007.

Families Surveyed	Families Not Fishing	Using Driftnets	Using Setnets	Both	Gillnets More than 6" mesh	Gillnets less than 6" mesh	Both
39	11	13	4	11	21	1	6

Compared with this time in a normal year, how are catch rates for salmon this week?

Chinook			Chum			Sockeye		
Very Good	Normal	Poor	Very Good	Normal	Poor	Very Good	Normal	Poor
0	8	20	N/A	N/A	N/A	N/A	N/A	N/A

Does the salmon run appear to be running early, late, or normal?

Chinook			Chum			Sockeye		
Early	Normal	Late	Early	Normal	Late	Early	Normal	Late
2	6	12	N/A	N/A	N/A	N/A	N/A	N/A

Comments: Of the 39 families contacted; 28 families reported fishing this week, 11 families reported they had not fished yet and were still preparing camp and waiting for the run to arrive (expected during the coming weekend). 10 other families on the survey route list were not yet available for interviewing and it is anticipated that most (if not all) of them are probably following the same pattern as the eleven that reported not fishing yet. 28 families reported fishing during this weeks opening. 13 families reported using drift nets. 4 families reported using only setnets. 11 families reported using both drift and setnets.
Chinook: No families reported the fishing as very good. 8 families reported the fishing as normal. 20 families reported the fishing as poor. 11 fishermen reported that due to the low water level this spring the Chinook are swimming deep and few and far between. The water clarity is also allowing fish to see and avoid their nets making drifting not so successful this early in the season as previous years. More fishermen reported due to these circumstances they will be fishing with their setnets this year as a result of their sporadic catches with drifting so far. All fishing families and those not reporting fishing this week are waiting for the run to hit and expect to be in full swing by this weekend. 2 families that started using setnets around May 20th reported being almost finished with their Chinook harvests for the season.
Chum: Fishermen felt it is still too early in the season to offer an assessment on the chum run for this weeks opening. Most fishermen surveyed are still using large mesh Chinook gear and report chum catches as only an occasional one or two fish.
Sockeye: Fishermen felt it is still too early in the season to offer an assessment on the sockeye run for this week's opening.

Appendix C3.–Kuskokwim River inseason subsistence salmon harvest weekly report, Orutsararmiut Native Council, June 18, 2007.

Fishing ending the week of June 17, 2007.

Families Surveyed	Families Not Fishing	Using Driftnets	Using Setnets	Both	Gillnets More than 6" mesh	Gillnets less than 6" mesh	Both
40	7	17	4	12	26	1	6

Compared with this time in a normal year, how are catch rates for salmon this week?

Chinook			Chum			Sockeye		
Very Good	Normal	Poor	Very Good	Normal	Poor	Very Good	Normal	Poor
0	10	23	N/A	N/A	N/A	N/A	N/A	N/A

Does the salmon run appear to be running early, late, or normal?

Chinook			Chum			Sockeye		
Early	Normal	Late	Early	Normal	Late	Early	Normal	Late
0	2	25	N/A	N/A	N/A	N/A	N/A	N/A

Comments: Of the 40 families contacted; 33 families reported fishing this week, 7 families reported they had not fished yet and were still preparing camp and waiting for the run as catches are just starting to pick up. 6 other families on the survey route list were not yet available for interviewing and it is anticipated that most (if not all) of them are probably following the same pattern as the seven that reported not fishing yet. This weekend was a start for many families salmon harvest season this year which resulted in crowded fishing areas around Bethel and Napaskiak. There have been a few comments on low water and the increase in snags due to the low levels. 17 families reported using drift nets. 4 families reported using only setnets. 12 families reported using both drift and setnets.

Chinook: No families reported the fishing as very good. 10 families reported the fishing as normal. 23 families reported the fishing as poor. 11 fishermen reported that due to the low water level this spring the Chinook are swimming deep and few and far between. The water clarity is also allowing fish to see and avoid their nets making drifting not so successful this early in the season as previous years. More fishermen reported due to these circumstances they will be fishing with their setnets this year as a result of their sporadic catches with drifting so far. All fishing families and those not reporting fishing this week are waiting for the run to pick up. 3 families that started using setnets from the start of the run reported being almost finished with their Chinook harvests for the season.

Chum: Fishermen felt it is still too early in the season to offer an assessment on the Chum run for this weeks opening. Chums are expected to pick up in numbers through this coming week. Most fishermen surveyed are still using large mesh Chinook gear and report chum catches as only an occasional one or two fish.

Sockeye: Fishermen felt it is still too early in the season to offer an assessment on the sockeye run for this weeks opening. Sockeye are expected to pick up in numbers through this coming week. Most families are trying to finish up their Chinook harvests and wait for the Sockeye to pick up before changing out their nets.

Appendix C4.–Kuskokwim River inseason subsistence salmon harvest weekly report, Orutsararmiut Native Council, June 25, 2007.

Fishing ending the week of June 24, 2007.

Families Surveyed	Families Not Fishing	Using Driftnets	Using Setnets	Both	Gillnets More than 6" mesh	Gillnets less than 6" mesh	Both
44	4	29	4	7	35	1	4

Compared with this time in a normal year, how are catch rates for salmon this week?

Chinook			Chum			Sockeye		
Very Good	Normal	Poor	Very Good	Normal	Poor	Very Good	Normal	Poor
0	14	26	N/A	N/A	N/A	N/A	N/A	N/A

Does the salmon run appear to be running early, late, or normal?

Chinook			Chum			Sockeye		
Early	Normal	Late	Early	Normal	Late	Early	Normal	Late
0	5	35	0	12	28	0	8	32

Comments: Of the 44 families contacted; 40 families reported fishing this week, 4 families reported they had not fished yet and were planning on starting this following week. 7 families on the survey route list were not available for interviewing. This week was a busy week for many families as fish racks are filling up, catches are increasing and fishing spots crowded. There have been a few comments on low water and the increase in snags due to the low levels. 29 families reported using drift nets. 4 families reported using only setnets. 7 families reported using both drift and setnets.

Chinook: No families reported the fishing as very good. 14 families reported the fishing as normal. 26 families reported the fishing as poor. The majority of fishermen reported that due to the low water level this spring the Chinook are swimming deep and few and far between. The water clarity is also allowing fish to see and avoid their nets making drifting not so successful this early in the season as previous years. More fishermen reported due to these circumstances they will be fishing with their setnets this year as a result of their sporadic catches with drifting so far. As hoped, the Chinook run has picked up over the week and the average catches have increased. It was noted by fishermen that fishing at the right tide is crucial for better drifting. One-third of our families on our survey list are close to finishing their Chinook harvests.

Chum: Chums are expected to pick up in numbers through this coming week. Most fishermen surveyed are still using large mesh Chinook gear and report chum catches as by catch due to their increased focus on targeting Chinook.

Sockeye: Sockeye are expected to pick up in numbers through this coming week. Most families are trying to finish up their Chinook harvests and wait for the Sockeye to pick up. The 5 families that did fish with smaller gear reported that fishing is slow and catch numbers low this week. A majority of the families using Chinook gear report that their by catch numbers are sufficient enough for Sockeye harvests

Appendix C5.–Kuskokwim River inseason subsistence salmon harvest weekly report, Orutsararmiut Native Council, July 3, 2007.

Fishing ending the week of July 2, 2007.

Families Surveyed	Families Not Fishing	Using Driftnets	Using Setnets	Both	Gillnets More than 6" mesh	Gillnets less than 6" mesh	Both
36	12	15	2	3	16	4	0

Compared with this time in a normal year, how are catch rates for salmon this week?

Chinook			Chum			Sockeye		
Very Good	Normal	Poor	Very Good	Normal	Poor	Very Good	Normal	Poor
9	9	2	16	4	0	0	8	12

Does the salmon run appear to be running early, late, or normal?

Chinook			Chum			Sockeye		
Early	Normal	Late	Early	Normal	Late	Early	Normal	Late
0	5	15	4	10	6	0	8	12

Comments: Of the 36 families contacted; 20 families reported fishing this week. 13 families reported they are all finished with their harvests of Chinook, Chum, and Sockeye harvests for the season. 10 families on the survey route list were not available for interviewing. This week families are finishing up with their harvests for the season as racks are moved into smokehouses efforts to harvest have ceased and harvest goals met. 15 families reported using drift nets. 2 families reported using only setnets. No families reported using both drift and setnets.

Chinook: 9 families reported the fishing as very good. 9 families reported the fishing as normal. 2 families reported the fishing as poor. As hoped, the Chinook run has picked up over the week and the average catches have increased. The majority of fishermen reported this week that the run has picked up and the majority of their catches have been big fish and mainly females. At the beginning of the week there were a couple reports of Chinook jumping up and over their driftnets as a result of water clarity. It was noted by fishermen that fishing at the right tide is crucial for better drifting. Out of all the families surveyed, 7 families will still be fishing for Chinook next week.

Chum: 16 families reported the fishing as very good. 4 families reported the fishing as normal. 2 families reported the fishing as poor. As expected, Chums have pick up in numbers and dominate catches when fished with smaller gear. Most fishermen surveyed are still using large mesh Chinook gear and report chum catches as by catch due to their increased focus on targeting Chinook. One family reported targeting reds and with a quarter of their net and sunk their cork line within 5 minutes with Chum. 4 families report the run as early. 10 families report the run as normal. 6 families report the run as late.

Sockeye: No families reported the fishing as very good. 8 families reported the fishing as normal. 12 families reported the fishing as poor. Overall this year's return of Sockeye is late and slow as reported by the majority of fishermen. The fishermen that did use their 6 inch or smaller mesh targeting Sockeye reported an overwhelming by catch of Chum. Fishermen noted that this is an off year for Sockeye as their abundance alternates on an every other year cycle. No families report the run as early. 8 families report the run as normal. 12 families report the run as late.

Appendix C6.–Kuskokwim River inseason subsistence salmon harvest weekly report, Orutsararmiut Native Council, July 9, 2007.

Fishing ending the week of July 8, 2007.

Families Surveyed	Families Not Fishing	Using Driftnets	Using Setnets	Both	Gillnets More than 6" mesh	Gillnets less than 6" mesh	Both
33	23	10	0	0	5	3	2

Compared with this time in a normal year, how are catch rates for salmon this week?

Chinook			Chum			Sockeye		
Very Good	Normal	Poor	Very Good	Normal	Poor	Very Good	Normal	Poor
6	4	0	8	2	0	3	7	0

Does the salmon run appear to be running early, late, or normal?

Chinook			Chum			Sockeye		
Early	Normal	Late	Early	Normal	Late	Early	Normal	Late
0	0	10	4	6	0	0	2	8

Comments: Of the 33 families contacted; 10 families reported fishing this week. 22 families reported they are all finished with their harvests of Chinook, Chum, and Sockeye harvests for the season. 1 family on the survey route list could not fish this season. This week families are finishing up with their salmon for the season as smokehouses have stopped smoking for the summer and harvest goals met. 5 families plan to go out one last time to meet their harvest goals. 10 families reported using drift nets. No families reported using only setnets. No families reported using both drift and setnets. 5 families reported using gillnets with greater then 6" mesh. 3 families reported using gillnets with less then 6" mesh. 2 families reported using both larger and smaller than 6" mesh

Chinook: 6 families reported the fishing as very good. 4 families reported the fishing as normal. No families reported the fishing as poor. The majority of fishermen reported this week that the run has picked up from prior weeks and the majority of their catches have been big fish and mainly females. It was noted by fishermen that fishing at the right tide is crucial for better drifting, and that the drop in water clarity has helped out catch rates. Out of all the families surveyed, 5 families plan on fishing for Chinook next week. 10 families that fished report the run about a week to ten days late this year.

Chum: 8 families reported the fishing as very good. 2 families reported the fishing as normal. No families reported the fishing as poor. The majority of fishermen report a strong run for chums this year. Also reported was an abundance of large Chum by catch rates in their Chinook gear. 4 families report the run as early. 6 families report the run as normal. No families report the run as late.

Sockeye: 3 families reported the fishing as very good. 7 families reported the fishing as normal. No families reported the fishing as poor. Overall this year's return of Sockeye is late but picked up nearing this past weekend. The fishermen that did use their 6 inch or smaller mesh targeting Sockeye reported an overwhelming by catch of Chum. Fishermen noted that this is an off year for Sockeye as their abundance alternates on an every other year cycle. No families report the run as early. 2 families report the run as normal. 8 families report the run as late.

Appendix C7.–Kuskokwim River inseason subsistence salmon harvest weekly report, Orutsararmiut Native Council, July 17, 2007.

Fishing ending the week of July 14, 2007.

Families Surveyed	Families Not Fishing	Using Driftnets	Using Setnets	Rod And Reel	Gillnets More than 6" mesh	Gillnets less than 6" mesh	Both
33	27	2	0	4	1	1	0

Compared with this time in a normal year, how are catch rates for salmon this week?

Chinook			Chum			Sockeye		
Very Good	Normal	Poor	Very Good	Normal	Poor	Very Good	Normal	Poor
0	0	6	0	2	4	0	1	5

Does the salmon run appear to be running early, late, or normal?

Chinook			Chum			Sockeye		
Early	Normal	Late	Early	Normal	Late	Early	Normal	Late
0	0	6	0	5	1	0	1	5

Comments: Of the 33 families contacted; 6 families reported fishing this week. All families reported they are all finished with their harvests of Chinook, Chum, and Sockeye harvests for the season. 1 family on the survey route list could not fish this season. This week families are rounding up fish camps and getting ready for berry season. 2 families reported using drift nets. No families reported using only setnets. No families reported using both drift and setnets. 1 family reported using gillnets with greater then 6" mesh. 1 family reported using gillnets with less then 6" mesh. 4 families reported using Rod and Reel over the past three weekends up the Kisaralik, Kwethluk, and Little Kasigluk. 22 families out of the 33 families surveyed reported they will be harvesting Coho this season. There was been reports as word of mouth of Coho catches over this past week.

Chinook: No families reported the fishing as very good. No families reported the fishing as normal. 6 families reported the fishing as poor, though this reflects that the run is over. Overall the run of Chinook this year was about a week to ten days late and harvest goals took a little more effort although not so rushed in fishing due to the lift of the subsistence schedule. The Chinook run has slowed down significantly through this week. Chinook caught in drift nets are red in color, commented as an indication of the end of the run. The families that reported using Rod and Reel report that this week in comparison to a couple weeks ago, catches have almost stopped and the Chinook have moved on and up to their spawning grounds.

Chum: No families reported the fishing as very good. 2 families reported the fishing as normal. 4 families reported the fishing as poor as the run is over for this year. The majority of fishermen reported a strong run for chums this year. Chum catches have slowed down this week and the majority of Chums caught are showing spawning colors, commented as an indication of the end of the run.

Sockeye: No families reported the fishing as very good. 1 family reported the fishing as normal. 5 families reported the fishing as poor. Overall this year's return of Sockeye was about a week late but picked up for a couple of days near the end of the run. Harvest goals were satisfied although Chum by-catch rates were overwhelming for those using 6" or less gear. Fishermen noted that this is an off year for Sockeye as their abundance alternates on an every other year cycle

APPENDIX D. EXAMPLE OF LOWER KUSKOKWIM RIVER SUBSISTENCE CATCH MONITORING INFORMATION PRESENTED AT KUSKOKWIM RIVER SALMON MANAGEMENT WORKING GROUP MEETINGS

Appendix D1.–Example of Lower Kuskokwim River inseason subsistence catch monitoring historical information presented at Kuskokwim River Salmon Management Working Group Meetings, 2007.

Summary of Subsistence Salmon Information Collected by ONC Technicians [a,b]

	Week	Number of Families			Chinook Salmon			Chum Salmon			Sockeye Salmon		
Year	Ending	Interviewed	Fishing	Not Fishing	Very Good	Normal	Poor	Very Good	Normal	Poor	Very Good	Normal	Poor
2001	9-Jun	16	16	0	6	6	4	[c]	[c]	[c]	[c]	[c]	[c]
	16-Jun	39			18	15	6	1	19	15	13	24	1
	23-Jun	35			27	7	1	0	15	20	24	11	0
	30-Jun	40	25	15	8	7	8	5	12	8	19	6	0
	7-Jul	44	7	37	0	1	5	4	1	1	0	5	2
	14-Jul	44	6	38	0	0	4	4	2	0	0	0	4
2002	8-Jun	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]
	15-Jun	27	23	4	21	2	0	3	8	7	3	11	3
	22-Jun	33	25	8	17	5	3	12	9	3	2	10	10
	29-Jun	34	22	12	16	6	0	21	0	0	0	3	16
	6-Jul	34	5	29	0	2	3	3	2	0	0	0	5
	13-Jul	36	10	26	0	3	5	8	0	0	0	0	8
2003	7-Jun	18	9	9	7	2	0	[c]	[c]	[c]	[c]	[c]	[c]
	14-Jun	33	24	9	22	2	0	0	2	0	0	3	0
	21-Jun	48	32	14	30	2	1	1	0	0	7	18	3
	28-Jun	50	34	16	30	4	0	3	9	13	27	7	0
	5-Jul	45	21	24	16	5	0	8	13	0	16	5	0
	12-Jul	46	14	32	0	12	2	13	1	0	0	12	2
2004	5-Jun	31	10	21	6	4	0	[c]	[c]	[c]	[c]	[c]	[c]
	12-Jun	41	37	4	27	8	2	[c]	[c]	[c]	[c]	[c]	[c]
	19-Jun	35	31	4	23	8	0	4	27	0	4	27	0
	26-Jun	43	31	12	19	12	0	24	7	0	5	22	4
	3-Jul	44	22	22	3	17	0	10	10	0	0	13	7
	10-Jul	44	13	31	0	10	0	8	2	0	0	4	6
2005	4-Jun	34	12	22	0	12	0	[c]	[c]	[c]	[c]	[c]	[c]

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Year	Week Ending	Number of Families			Chinook Salmon			Chum Salmon			Sockeye Salmon		
		Interviewed	Fishing	Not Fishing	Very Good	Normal	Poor	Very Good	Normal	Poor	Very Good	Normal	Poor
2005	11-Jun	39	26	13	20	6	0	[c]	[c]	[c]	[c]	[c]	[c]
	18-Jun	48	42	6	36	6	0	14	28	0	31	11	0
	25-Jun	48	34	14	25	5	0	19	15	0	28	6	0
	2-Jul	32	3	29	3	0	0	2	1	0	3	0	0
	9-Jul	22	2	20	0	2	0	1	1	0	1	1	0
2006	3-Jun	22	0	22	0	0	0	[c]	[c]	[c]	[c]	[c]	[c]
	10-Jun	32	19	13	6	13	0	0	0	0	[c]	[c]	[c]
	17-Jun	36	30	6	28	2	0	18	12	0	16	14	0
	24-Jun	48	43	5	34	9	0	39	4	0	8	24	11
	1-Jul	46	14	32	3	11	0	10	4	0	6	8	0
	8-Jul	38	8	30	0	8	0	2	6	0	3	5	0
	15-Jul	26	5	21	0	5	0	5	0	0	0	5	0
2007	3-Jun	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]	[d]
	12-Jun	39	28	11	0	8	20	[c]	[c]	[c]	[c]	[c]	[c]
	17-Jun	40	33	7	0	10	23	[c]	[c]	[c]	[c]	[c]	[c]
	24-Jun	44	40	4	0	14	26	[c]	[c]	[c]	[c]	[c]	[c]
	3-Jul	36	20	13	9	9	2	16	4	0	0	8	12
	9-Jul	33	10	22	6	4	0	8	2	0	3	7	0
	17-Jul	33	6	27	0	0	6	0	2	4	0	1	5

[a] Represents responses from the question “Compared with this time in a “Normal” year how were catch rates for salmon this week?”

[b] Only reports from the month of June and the first 2 weeks of July were used for comparison.

[c] No data available

[d] Indicates respondents declined to comment.

APPENDIX E. KUSKOKWIM RIVER INSEASON SUBSISTENCE SALMON SUMMARY OF FISHING REPORTS

Appendix E1.–Kuskokwim River subsistence summary report, summary of salmon fishing, 2001–2007.

Summary of Subsistence Salmon Information Collected by ONC Technicians [a]																
		Number of Families			Chinook Salmon			Chum Salmon			Sockeye Salmon			Coho Salmon		
Year	Week Ending	Interviewed	Fishing	Not Fishing	Very Good	Normal	Poor	Very Good	Normal	Poor	Very Good	Normal	Poor	Very Good	Normal	Poor
2001	Jun 09	16	16	0	6	6	4									
	Jun 16	39	ND	ND	18	15	6	1	19	15	13	24	1			
	Jun 23	35	ND	ND	27	7	1	0	15	20	24	11	0	0	0	0
	Jun 30	40	25	15	8	7	8	5	12	8	19	6	0	0	0	0
	Jul 07	44	7	37	0	1	5	4	1	1	0	5	2	0	0	0
	Jul 14	44	6	38	0	0	4	4	2	0	0	0	4	0	0	0
	Jul 21	44	0	44	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Jul 28	44	9	35	0	0	0	1	7	0	0	0	0	0	7	1
	Aug 04	42	20	22				0	1	17				18	2	0
	Aug 11	37	3	34				0	0	0				2	1	0
	Aug 18	37	3	34				0	0	3				1	2	0
	Aug 25	37	3	34				0	0	3				3	0	0
Total [b]		459														
Average		38	9	29	8	5	4	2	6	7	9	8	1	3	1	0
2002	Jun 08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Jun 15	27	23	4	21	2	0	3	8	7	3	11	3			
	Jun 22	33	25	8	17	5	3	12	9	3	2	10	10			
	Jun 29	34	22	12	16	6	0	21	0	0	0	3	16			
	Jul 06	34	5	29	0	2	3	3	2	0	0	0	5			
	Jul 13	36	10	26	0	3	5	8	0	0	0	0	8	0	0	0
	Jul 20	40	9	31	0	9	0	1	7	1	0	0	9	0	0	0
	Jul 27	35	31	4	0	31	0	0	31	0	0	31	0	9	22	0
	Aug 03	37	13	24	0	0	0	0	10	2	0	0	0	9	4	0
	Aug 10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total [b]		276														
Average		35	17	17	7	7	1	6	8	2	1	7	6	5	7	0
2003	Jun 07	18	9	9	7	2	0									
	Jun 14	33	24	9	22	2	0	0	2	0	0	3	0			

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		Number of Families			Chinook Salmon			Chum Salmon			Sockeye Salmon			Coho Salmon		
Year	Week Ending	Interviewed	Fishing	Not Fishing	Very Good	Normal	Poor	Very Good	Normal	Poor	Very Good	Normal	Poor	Very Good	Normal	Poor
2003	Jun 21	48	32	14	30	2	1	1	0	0	7	18	3			
	Jun 28	50	34	16	30	4	0	3	9	13	27	7	0			
	Jul 05	45	21	24	16	5	0	8	13	0	16	5	0			
	Jul 12	46	14	32	0	12	2	13	1	0	0	12	2			
	Jul 19	48	5	43	0	5	0	5	0	0	0	5	0	2	3	0
	Jul 26	48	7	41	0	7	0	4	3	0	0	7	0	6	1	0
	Aug 09	49	11	38	0	0	0	0	0	0	0	0	0	10	1	0
	Aug 16	48	10	38	0	0	0	0	0	0	0	0	0	9	1	0
Total [b]		433														
Average		43	17	26	11	4	0	4	3	1	6	6	1	7	2	0
2004	Jun 05	31	10	21	6	4	0									
	Jun 12	41	37	4	27	8	2									
	Jun 19	35	31	4	23	8	0	4	27	0	4	27	0			
	Jun 26	43	31	12	19	12	0	24	7	0	5	22	4			
	Jul 03	44	22	22	3	17	0	10	10	0	0	13	7			
	Jul 10	44	13	31	0	10	0	8	2	0	0	4	6			
	Jul 17	35	6	29	0	6	0	0	6	0	0	6	0	0	6	0
	Jul 24	46	8	38										0	8	0
	Jul 31	47	7	40										7	0	0
	Aug 07	58	22	36										19	3	0
	Aug 14	44	16	28										16	0	0
	Aug 21	52	8	44										8	0	0
Total [b]		520														
Average		43	18	26	11	9	0	9	10	0	2	14	3	8	3	0
2005	Jun 04	34	12	22	0	12	0									
	Jun 11	39	26	13	20	6	0									
	Jun 18	48	42	6	36	6	0	14	28	0	31	11	0			
	Jun 25	48	34	14	25	5	0	19	15	0	28	6	0			
	Jul 02	32	3	29	3	0	0	2	1	0	3	0	0			

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		Number of Families			Chinook Salmon			Chum Salmon			Sockeye Salmon			Coho Salmon		
Year	Week Ending	Interviewed	Fishing	Not Fishing	Very Good	Normal	Poor	Very Good	Normal	Poor	Very Good	Normal	Poor	Very Good	Normal	Poor
2005	9-Jul	22	2	20	0	2	0	1	1	0	1	1	0			
Total [b]		223														
Average		37	20	17	14	5	0	9	11	0	16	5	0	ND	ND	ND
2006	3-Jun	22	0	22	0	0	0									
	10-Jun	32	19	13	6	13	0	0	0	0						
	17-Jun	36	30	6	28	2	0	18	12	0	16	14	0			
	24-Jun	48	43	5	34	9	0	39	4	0	8	24	11			
	1-Jul	46	14	32	3	11	0	10	4	0	6	8	0			
	8-Jul	38	8	30	0	8	0	2	6	0	3	5	0			
	15-Jul	26	5	21	0	5	0	5	0	0	0	5	0			
Total [b]		248														
Average		35	17	18	10	7	0	12	4	0	7	11	2	ND	ND	ND
2007	3-Jun	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
	12-Jun	39	28	11	0	8	20	[d]	[d]	[d]	[d]	[d]	[d]			
	17-Jun	40	33	7	0	10	23	[d]	[d]	[d]	[d]	[d]	[d]			
	24-Jun	44	40	4	0	14	26	[d]	[d]	[d]	[d]	[d]	[d]			
	2-Jul	36	20	12	9	9	2	16	4	0	0	8	12			
	8-Jul	33	10	23	6	4	0	8	2	0	3	7	0			
	14-Jul	33	6	27	0	0	6	0	2	4	0	1	5			
Total [b]		225														
Average		38	23	14	3	8	13	8	3	1	1	5	6			

[a] Represents responses from the question “Compared with this time in a “Normal” year how were catch rates for salmon this week?”

[b] Represents the total number of interviews conducted during the survey year, most families were interviewed more than once.

Appendix E2.–Kuskokwim River subsistence salmon summary, quality of fishing report, 2001–2007.

Summary of Subsistence Salmon Information Collected by ONC Technicians [a]																
					% Describing Chinook fishing as			% Describing Chum fishing as			% Describing Sockeye fishing as			% Describing Coho fishing as		
Year	Week Ending	Number Interviewed	Fishing	Percent Fishing	Very Good	Normal	Poor	Very Good	Normal	Poor	Very Good	Normal	Poor	Very Good	Normal	Poor
2001	Jun 09	16	16	100%	38%	38%	25%									
	Jun 16	39	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			
	Jun 23	35	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Jun 30	40	25	63%	32%	28%	32%	20%	48%	32%	76%	24%	0%	0%	0%	0%
	Jul 07	44	7	16%	0%	14%	71%	57%	14%	14%	0%	71%	29%	0%	0%	0%
	Jul 14	44	6	14%	0%	0%	67%	67%	33%	0%	0%	0%	67%	0%	0%	0%
	Jul 21	44	0	0%	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Jul 28	44	9	20%	0%	0%	0%	11%	78%	0%	0%	0%	0%	0%	78%	11%
	Aug 04	42	20	48%				0%	5%	85%				90%	10%	0%
	Aug 11	37	3	8%				0%	0%	0%				67%	33%	0%
	Aug 18	37	3	8%				0%	0%	100%				33%	67%	0%
	Aug 25	37	3	8%				0%	0%	100%				100%	0%	0%
Total [b]		459														
Average		38	9													
2002	Jun 08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Jun 15	27	23	85%	91%	9%	0%	13%	35%	30%	13%	48%	13%			
	Jun 22	33	25	76%	68%	20%	12%	48%	36%	12%	8%	40%	40%			
	Jun 29	34	22	65%	73%	27%	0%	95%	0%	0%	0%	14%	73%			
	Jul 06	34	5	15%	0%	40%	60%	60%	40%	0%	0%	0%	100%			
	Jul 13	36	10	28%	0%	30%	50%	80%	0%	0%	0%	0%	80%	0%	0%	0%
	Jul 20	40	9	23%	0%	100%	0%	11%	78%	11%	0%	0%	100%	0%	0%	0%
	Jul 27	35	31	89%	0%	100%	0%	0%	100%	0%	0%	100%	0%	29%	71%	0%
	Aug 03	37	13	35%	0%	0%	0%	0%	77%	15%	0%	0%	0%	69%	31%	0%
	Aug 10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total [b]		276														
Average		35	17													
2003	Jun 07	18	9	50%	78%	22%	0%									
	Jun 14	33	24	73%	92%	8%	0%	0%	8%	0%	0%	13%	0%			

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Year	Week Ending	Number Interviewed	Fishing	Percent Fishing	% Describing Chinook fishing as Very Good	Normal	Poor	% Describing Chum fishing as Very Good	Normal	Poor	% Describing Sockeye fishing as Very Good	Normal	Poor	% Describing Coho fishing as Very Good	Normal	Poor
2003	Jun 21	48	32	67%	94%	6%	3%	3%	0%	0%	22%	56%	9%			
	Jun 28	50	34	68%	88%	12%	0%	9%	26%	38%	79%	21%	0%			
	Jul 05	45	21	47%	76%	24%	0%	38%	62%	0%	76%	24%	0%			
	Jul 12	46	14	30%	0%	86%	14%	93%	7%	0%	0%	86%	14%			
	Jul 19	48	5	10%	0%	100%	0%	100%	0%	0%	0%	100%	0%	40%	60%	0%
	Jul 26	48	7	15%	0%	100%	0%	57%	43%	0%	0%	100%	0%	86%	14%	0%
	Aug 09	49	11	22%	0%	0%	0%	0%	0%	0%	0%	0%	0%	91%	9%	0%
	Aug 16	48	10	21%	0%	0%	0%	0%	0%	0%	0%	0%	0%	90%	10%	0%
Total [b]		433														
Average		43	17	0												
2004	Jun 05	31	10	32%	60%	40%	0%									
	Jun 12	41	37	90%	73%	22%	5%									
	Jun 19	35	31	89%	74%	26%	0%	13%	87%	0%	13%	87%	0%			
	Jun 26	43	31	72%	61%	39%	0%	77%	23%	0%	16%	71%	13%			
	Jul 03	44	22	50%	14%	77%	0%	45%	45%	0%	0%	59%	32%			
	Jul 10	44	13	30%	0%	77%	0%	62%	15%	0%	0%	31%	46%			
	Jul 17	35	6	17%	0%	100%	0%	0%	100%	0%	0%	100%	0%	0%	100%	0%
	Jul 24	46	8	17%										0%	100%	0%
	Jul 31	47	7	15%										100%	0%	0%
	Aug 07	58	22	38%										86%	14%	0%
	Aug 14	44	16	36%										100%	0%	0%
	Aug 21	52	8	15%										100%	0%	0%
Total [b]		520														
Average		43	18	0												
2005	Jun 04	34	12	35%	0%	100%	0%									
	Jun 11	39	26	67%	77%	23%	0%									
	Jun 18	48	42	88%	86%	14%	0%	33%	67%	0%	74%	26%	0%			
	Jun 25	48	34	71%	74%	15%	0%	56%	44%	0%	82%	18%	0%			

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Year	Week Ending	Number Interviewed	Fishing	Percent Fishing	% Describing Chinook fishing as Very Good	Normal	Poor	% Describing Chum fishing as Very Good	Normal	Poor	% Describing Sockeye fishing as Very Good	Normal	Poor	% Describing Coho fishing as Very Good	Normal	Poor
2005	2-Jul	32	3	9%	100%	0%	0%	67%	33%	0%	100%	0%	0%			
	9-Jul	22	2	9%	0%	100%	0%	50%	50%	0%	50%	50%	0%			
Total [b]		223														
Average		37	20	0												
2006	3-Jun	22	0	0%	0%	0%	0%									
	10-Jun	32	19	59%	32%	68%	0%	0%	0%	0%						
	17-Jun	36	30	83%	93%	7%	0%	60%	40%	0%	53%	47%	0%			
	24-Jun	48	43	90%	79%	21%	0%	91%	9%	0%	19%	56%	25%			
	1-Jul	46	14	30%	21%	79%	0%	71%	29%	0%	43%	57%	0%			
	8-Jul	38	8	21%	0%	100%	0%	25%	75%	0%	38%	62%	0%			
	15-Jul	26	5	19%	0%	100%	0%	100%	0%	0%	0%	100%	0%			
Total [b]		248														
Average		35	17													
2007	3-Jun															
	12-Jun	39	28	59%	0%	29%	71%									
	17-Jun	40	33	83%	0%	30%	70%									
	24-Jun	44	40	91%	0%	35%	65%									
	2-Jul	36	20	56%	45%	45%	10%	80%	20%	0%	0%	40%	60%			
	8-Jul	33	10	30%	60%	40%	0%	80%	20%	0%	30%	70%	0%			
	14-Jul	33	6	18%	0%	0%	100%	0%	33%	67%	0%	17%	83%			
Total [b]		225														
Average		38	23													

[a] Represents responses from the question “Compared with this time in a “Normal” year how were catch rates for salmon this week?”

[b] Represents the total number of interviews conducted during the survey year, most families were interviewed more than once.